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ABSTRACT

This book contains four monographs based on research conducted in a number of African countries between 1965 and 1967 in an attempt to illuminate some of the problems confronting educational planners in developing countries. The book is one of three related volumes of case studies on educational planning in the English-speaking countries of Uganda, Tanzania, and Nigeria. Each volume consists of several previously published monographs, which have been collected in book form to facilitate comparison of the approaches taken in different countries to common problems. This volume contains studies on the integration of educational development in Tanzania and East Africa. Included are the following monographs: "Integration of Educational and Economic Planning in Tanzania," by George Skorov; "Manpower, Employment and Education in the Rural Economy of Tanzania," by Guy Hunter; "Planning Nonformal Education in Tanzania," by Jane King; and "The Legal Framework of Educational Planning and Administration in East Africa," by J. Roger Carter. (Author/JG)

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IIEP African studies

The research undertaken by the International Institute for Educational Planning (IIEP) in African countries between 1965 and 1967 was an attempt to shed light upon several important problems confronting educational planners in virtually all developing countries. These problems included the integration of educational and economic planning, the costing and financing of educational development, the supply of and demand for teachers, the effect of rapid expansion on the quality of education, the planning of adult education, the bearing of educational planning upon external aid, and the administrative aspects of planning, including implementation.

The project was undertaken in three stages. The first involved the collection and analysis of documentation on three English-speaking countries, Nigeria, Tanzania and Uganda, and two French-speaking countries, Ivory Coast and Senegal, where the studies were to be undertaken, followed by the drafting and critical review of provisional reports. The second stage consisted of field investigations by staff members and expert consultants, lasting one to three months in each case, and carried out with the co-operation of officials and advisers of the countries concerned. The last stage involved the drafting, criticism, revision and final editing of the report.

Two senior staff members of IIEP, Raymond Lyons and Raymond Poignant, directed the studies in the English-speaking and French-speaking countries respectively, from initial design to final editing. In all, sixteen individual case studies (eleven concerned with English-speaking countries and five with French) were prepared for publication and issued promptly in monograph form.

The great advantage of issuing the individual case studies separately was that of speed. By this method, the shortest possible time elapsed between completion of the case studies and getting the results into the hands of the users. Now that all the research work has been completed and the individual monographs published, however, the Institute has decided to bring together related studies and issue them in book form. Three volumes of case studies on English-speaking African countries are now being published, dealing in turn with the process of educational planning, the costing and financing of educational development, and the integration and administration of educational development.

The present volume contains studies on the integration of educational development in Tanzania and in East Africa. The Institute hopes that the reader, by being able to compare approaches made in different countries to common problems, may be able to extract from their experience lessons which may prove useful not only to the countries studied but to *all* developing countries.

While gratitude is expressed to the governments, organizations and many individuals whose co-operation made these studies possible, and to the Ford Foundation and the French Government for their help in financing them, it is emphasized that responsibility for the facts, analyses and interpretations presented rests with the authors. In making the decision to publish these studies, neither Unesco nor IIEP necessarily endorses the views expressed in them, but they feel that their content is worthy of open and free discussion.

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Integration of educational and economic planning in Tanzania

George Skorov

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Foreword

One primary aim of modern educational planning is to expand and reshape a nation's educational system to fit its priority development needs, including the need for various types and amounts of manpower required to support economic growth and social development. Most students of educational planning are therefore agreed today that projections of future manpower requirements, derived from projections of economic growth patterns as reflected in the national economic development plan, must be given heavy weight—though not exclusive weight—in formulating educational development plans. The logic, however, is far simpler than the practical problems encountered in applying it.

The aim of this study by George Skorov, a senior staff member of the IIEP, is to explore what these problems are and how they were handled in one particular country at a relatively early stage of development. Tanzania was an excellent laboratory for the purpose because, unlike many developing countries today, it has both an economic and an educational plan that are on speaking terms; it has conducted three national manpower studies in order to provide guidance to educational planning; and, not least important, the Tanzanian Government has boldly given first priority in its educational plans and policies to meeting the manpower needs of economic growth, at the necessary cost of postponing some other important educational services until a stronger economic base for them can be established.

The monograph is aimed at educators and educational planners, though hopefully it will be found useful as well by economic and manpower planners. It has the virtue of bringing together in one place an integrated examination of an economic plan, some pioneer manpower studies, and an educational plan.

Whatever the reader's view may be of the so-called 'manpower approach' to educational planning—a subject on which the author can best be described as a 'middle-of-the-roader'—he will surely be impressed by some of the technical difficulties which this study exposes. Attention focuses especially upon the following practical problems: (a) getting adequate data to assess the present manpower 'stock' and its educational profile; (b) making reliable projections of national economic growth in the face of great uncertainties regarding volatile export commodity prices and foreign assistance flows; (c) establishing a valid relationship between a given rate of economic growth and the supply of manpower required to support it; (d) assessing the vast area of employment and potential employment, particularly in the rural areas where most people live in countries like Tanzania, that are not covered by studies which focus on 'high-level' manpower requirements but which need to be taken into account in educational planning; and (e) translating conventional employment classifications (based largely on the experience and practices of highly developed countries) into educational qualifications that are relevant and feasible in the very different circumstances of developing countries.

These problems are delved into here not with a view to discouraging the use of manpower considerations in educational planning but, on the contrary, with a view to defining the frontiers where fresh research and improved practices are needed in order to convert good theory into useful applications.

At the successive stages of preparing and revising this study, the author received generous help from many experts and officials in Tanzania, especially in the Central Establishment of the Office of the President, in the Ministries of Education, Economic Affairs and Development Planning, Labour, Industries and Communications and Community Development, and in the University College of Dar es Salaam. The author and the Institute acknowledge their gratitude to Augustin Mwingira, Assistant Chief Education Officer, and Henry Okulo, Manpower Officer, both of whom collaborated most closely with the author, and to the manpower and labour force specialists of the Ford Foundation in Kenya and Tanzania, particularly Robert L. Thomas, Manpower Adviser for East and Central Africa, who spared no time and effort in making his experience available for this study.

Philip H. Coombs
Director, IIEP

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Introduction

One of the underlying concepts of this study is that the development of education must be viewed in the larger context of economic and social development, and that the planning of education should, therefore, be seen as an integral part of over-all development planning. There are at least two main reasons why this should be so. First, the resources, both human and material, that can be devoted to education are limited by the total amount of resources provided by the economy. Second, the product of the educational sector, just as the products of other sectors, is destined for 'consumption', and must, therefore, correspond qualitatively and quantitatively to the requirements of the economy and of society at large, particularly with regard to the various skills needed for economic and social development. It is this second aspect which constitutes the subject-matter of the present study. Its purpose is not to make any new assessment of manpower needs, or to formulate a new educational strategy for Tanzania, but rather to analyse what has been done in this field so far and to ascertain the lessons that can be drawn from this experience. The integration of educational and economic planning in Tanzania is viewed from the angle of methods used and results obtained, the main emphasis being laid on the analysis of the methods by which educational planning is being geared to economic needs.

The study itself was completed in three stages. The first consisted of a careful analysis of all the available documentation with a view to evolving a series of working hypotheses. In the second stage, these hypotheses were critically examined and checked during a period of field-work study which included interviews with planners, manpower experts, educationists, employers and students, visits to a number of educational institutions specially selected for the purpose, and analysis of relevant documents available on the spot. The last stage consisted in comparing the initial assumptions with the actual findings, improving some working hypotheses, rejecting others as non-relevant, and adding new ones which had emerged in the course of the research.

Part One

Assessing manpower requirements for development

1 The economic development plan

Tanzania is one of the youngest States; it was founded in April 1964, when Tanganyika, independent since December 1961, merged with Zanzibar, which had undergone a revolution in January 1964, to form the United Republic of Tanganyika and Zanzibar. It covers an area of some 362,000 square miles, almost four times that of the United Kingdom and nearly as large as that of Nigeria. Though primarily a country of big plains and plateaux, it contains also the highest peak in Africa—Kilimanjaro (19,000 feet) and the second deepest lake in the world—Lake Tanganyika. Over a large part of the country, land is extensively eroded and, except for the highlands and the coastal area, suffers from a shortage of water. Most of the rivers are not navigable and rainfall is erratic.

The population is estimated at just over 10 million (1965), 98.5 per cent of which are Africans, and is composed of several dozen tribes, of which only one, the Sukuma, numbers more than a million. Though more than 120 dialects are spoken, most of them have a common linguistic root in Bantu, which forms the basis of Kiswahili, the national language. This is an important fact from the point of view of education; only a few African countries can claim to have a national language other than English or French. The bulk of the remaining 1.5 per cent of the population is constituted, as in other East African countries, by Indians, Pakistanis and Arabs, the Europeans numbering 20,000 only. The population growth is believed to be 2 per cent a year—lower than in many developing countries. A combination of malnutrition, lack of hygiene and shortage of medical care is responsible for a life expectancy at birth of only 35 to 40 years. It is not surprising, therefore, that half of the population is estimated to be under the age of 16, another important fact from the point of view of educational planning. Just as important in this context is the uneven distribution of the population; while the average population density is estimated at 27.6 per square mile, over half of the population is concentrated on one-sixth of the area of the country and only 4 per cent live in towns.

The economy of Tanzania, like that of most other African countries, is based on agriculture, which, together with livestock, forestry and fishing, accounts for about 60 per cent of the gross domestic product (GDP). Such structural imbalance is striking, even for a developing country, as can be seen from Table 1.

It should be noted that the subsistence sector of agriculture accounted for one-third of the total GDP at factor cost (i.e., at market prices less indirect taxes) in 1960-62, and that 80 per cent of the foodstuffs consumed during this period did not enter any market channels.

The mining and quarrying sector (included with agriculture in Table 1) represented about 3 per cent, and manufacturing and processing 4 per cent of monetary GDP, and both sectors grow at a rate of 6 to 10 per cent per annum at current prices; but it is the agricultural sector which, for many years to come, will set the pace for the growth of the economy as a whole; and the average annual growth of GDP at current prices during the period 1954-64 amounted to 4.5 per cent.

The predominance of primary production, particularly agriculture, makes the Tanzanian economy not only easily vulnerable to weather conditions—as was illustrated by the severe drought of 1961 and the resulting famine and fall in GDP—but also heavily dependent on foreign trade. About four-fifths of consumer goods other than foodstuffs have to be imported, while exports account for over 40 per cent of monetary GDP. The principal export commodities are sisal, of which Tanzania is the largest world exporter and which provides over a third of

TABLE 1. Comparative structures of gross domestic product (in percentage)

Type of activities	Tanganyika average 1960-62	Typical for under-developed economies[1]	Tanganyika		Typical for high-income economies[2]
			Target 1970	Target 1980	
Primary production					
All rural and mining activities	60.0	47	50.0	39.0	13
All industrial activities	13.0	20	19.4	26.7	49
Manufacturing and processing	(4.0)	(11)	(7.5)	(13.3)	(32)
Basic facilities[3]	(5.6)	(5)	(6.3)	(7.1)	(11)
Construction	(3.4)	(4)	(5.6)	(6.3)	(6)
Tertiary activities					
Services, distribution, rents and administration	27.0	33	30.6	34.3	38
Total GDP	100	100	100	100	100

NOTES
1. With income under £44 per head
2. Industrialized countries with income above £280 per head
3. Transport, storage, communications and public utilities

SOURCE
Tanganyika. *Five-year plan for economic and social development 1964-69*, p. 11. Dar es Salaam, Government Printer, 1964

export earnings, cotton and coffee. Animal husbandry products do not play any significant part in the export trade at present but, with a relatively small investment, they could make a substantial contribution to the national income. In Zanzibar, the main cash crop is cloves; it provides nearly all the foreign currency earnings of Zanzibar.

The predominance of agriculture and the dependence on foreign trade render the Tanzanian economy very sensitive to fluctuations in the terms of trade as well as vulnerable to weather conditions, and this inevitably makes the implementation of economic plans a hazardous undertaking. Nor is the heavy reliance on foreign aid likely to redress the balance in favour of more stability.

The average income per head is believed to be about £20 per annum and does not seem to have changed in the course of the last dozen years despite an annual growth rate of about 4.5 per cent at current prices.[1] However, in a situation where the subsistence sector accounts for 30 per cent of GDP, the evaluation technique is so imperfect that any estimate becomes aleatory. One is inclined to believe that, in view of the relatively slow demographic growth, the general tendency would be for income per head to rise rather than to stagnate or to fall.

Development planning started shortly before independence, and the first attempt covered the period 1961/62-1963/64. Though based on an extensive survey of the economy made by a World Bank mission, it was a programme for public capital expenditure rather than a comprehensive economic development plan. The authors of this programme themselves acknowledged that:

'The reality of economic planning in the hustle and bustle of a fast-developing African country bears little or no relation to the theoretical work on elegant models constructed in statistical laboratories of more developed countries. In Tanganyika it has not even proved possible to follow the "programming" approach which starts from over-all targets of gross domestic product, and estimates subsequently the resulting levels of consumption, imports, exports, capital formation and other relevant aggregates.'[2]

The first comprehensive economic development plan was produced in 1964 and covers the five-year period 1964/65-1968/69. It was drawn up by an international team of economists led by a French director, Mr Faudon. The machinery for planning, in the form of the Directorate of Development and Planning, was set up in the President's Office and charged with responsibility for 'formulating, directing and co-ordinating the over-all social, economic and financial policies of the country'. The plan was conceived as part of a long-term development programme extending up to 1980 and whose main objectives, as defined by President Nyerere in an address to parliament, were to raise income per head

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1. All data throughout this study refer to the Tanzanian mainland unless specified otherwise.
2. *Development Plan for Tanganyika 1961/62-1963/64*, Dar es Salaam, Government Printer, 1962, p. 1.

TABLE 2. Projected evolution of the gross domestic product (monetary and subsistence)

Sectors	Average 1960-62			1970			1980		
	Monetary	Subsistence	Total	Monetary	Subsistence	Total	Monetary	Subsistence	Total
	(£ million)			(£ million)			(£ million)		
Crop husbandry[1]	37.7	45.7	83.4	72.2	54.6	126.8	123.4	65.4	188.8
Livestock[1]	5.9	12.3	18.2	10.6	15.1	25.7	20.9	18.8	39.7
Fishing[1]	1.3	0.4	1.7	2.1	0.6	2.7	3.3	0.8	4.1
Forest products[1]	1.1	1.5	2.6	1.6	1.8	3.4	2.6	2.3	4.9
Mining and quarrying	5.2	—	5.2	7.5	—	7.5	10.3	—	10.3
Processing and manufacturing	7.4	—	7.4	25.0	—	25.0	84.9	—	84.9
Public utilities	1.3	—	1.3	3.7	—	3.7	9.0	—	9.0
Construction	6.3	—	6.3	18.5	—	18.5	40.0	—	40.0
Transport and communications	8.7	—	8.7	17.2	—	17.2	35.8	—	35.8
Distribution	22.1	—	22.1	44.2	—	44.2	93.5	—	93.5
Rents and royalties	8.0	—	8.0	17.0	—	17.0	33.5	—	33.5
Public adminstration and defence	12.6	—	12.6	25.2	—	25.2	54.4	—	54.4
Other services	6.9	—	6.9	15.0	—	15.0	37.2	—	37.2
Total GDP	124.5	59.9	184.4	259.8	72.1	331.9	548.8	87.3	636.1
Population (million)			9.4			11.3			14.1
GDP per head (in £)			19.6			29.3			45.1

NOTE

[1] Primary rural products for the years 1960-62 valued at 1960 prices. Other products at current prices

SOURCE

Tanganyika. *Five-year-plan* . . ., op. cit., p. 9

from £20 to £45 by 1980, to make the country self-sufficient for trained manpower, and to raise the expectation of life from the present 35 to 40 years-50 years. The five-year plan is seen as the first step towards these objectives. Its targets are shown in Table 2.

It is noteworthy that the growth rate set for the five-year periods up to 1980 is 6.7 per cent per annum, as against a growth rate of only 4.5 per cent at current prices in the preceding seven years and a rate of only 3.5 per cent at constant prices (i.e., in real terms) during the period 1960-64. The evolution of GDP by sectors is shown in Table 3.

The inquiry revealed that the 6.7 per cent growth rate was obtained by averaging the sectoral growth rates. However, the obvious difficulties involved in establishing the relative weights of the various sectors, especially in an economy in which the subsistance sector accounts for almost one-third of GDP, throw some doubt on the validity of such an approach. When the growth rate of 6.7 per cent is set against the likely resources which the country could count upon, the targets of the five-year plan appear rather ambitious; their fulfilment may require a somewhat longer period.

TABLE 3. Gross domestic product at factor cost[1]

Sectors	1960	1961	1962	1963	1964
			(£ million)		
(a) *At current prices*					
Agriculture	113	114	124	139	141
Mining and quarrying	5	5	5	4	6
Manufacturing	5	7	8	8	9
Construction	5	6	6	6	7
Electricity and water	1	1	1	1	2
Commerce	21	22	24	27	28
Rent	8	8	9	9	11
Transport	9	8	9	9	10
Services	18	20	21	27	30
Gross domestic product[2]	185	193	208	232	244
Index	100	104	112	125	132
(b) *In real terms (at constant prices)*					
Total gross domestic product	185	177	190	197	210
Index	100	96	103	107	114

NOTES

1. Gross domestic product at factor cost is equal to the total income produced, as calculated by the methods adopted in Tanzania, within the geographical area of the country. 'Gross' means that no deduction has been made for depreciation, and 'at factor cost' indicates that any value added by indirect taxes or subsidies has been excluded
2. Because of rounding, the totals do not necessarily add up correctly

SOURCE

Budget survey 1965-66: pp. 4 and 5. Dar es Salaam, 1965

Nearly half of the total resources which are to be invested under the plan and almost four-fifths of the resources which are to be provided by the government are expected to come from abroad. Such heavy reliance on external resources, with all the uncertainties which it implies, cannot but seriously affect the prospects of implementing the plan. Another element of uncertainty lies in Tanzania's heavy dependence on the terms of trade which is at the root of economic uncertainties in all primary-producing countries. However, this study is not concerned with evaluating the feasibility of the Tanzanian development plan; if some of the factors affecting the possible fulfilment of the plan have been evoked here, it is mainly because they are bound ultimately to affect the manpower requirements for development and, consequently, the demands placed on the educational system. There are two possible ways of coping with such uncertainties. One is a continuous reappraisal of the feasibility of the plan and a corresponding adjustment of its targets, including projections of manpower requirements; the other is to avoid over-specialization in post-secondary education and vocational training so as to allow for a good deal of flexibility in educational output.

2 Labour force and employment

Population statistics have been available in Tanzania for a dozen years or so, and the latest census was carried out in 1957. There is also an annual enumeration of employees taken on 30 June by means of questionnaires sent to all known employers. This is believed to ensure a complete coverage of firms employing more than fifty persons, i.e., about four-fifths of total wage and salary employment, the remainder being estimated. A detailed labour force survey was made in 1965 under the direction of Robert Ray, labour force specialist from the Ford Foundation, but its results were not available at the time this study was conducted. The evolution of wage and salary employement in the past five years is shown in Table 4.

As can be seen, the numbers in wage and salary employment are very small indeed, representing about 6.5 per cent only of the economically active population. All that has so far been done with regard to manpower planning concerns this small section, the remaining 93.5 per cent being affected only marginally. This state of affairs is not due to any omission on the part of manpower planners, but to the fact that in all developing countries planning is focused primarily on the modern sector, which in fact provides nearly all wage and salary employment.

Table 4 shows that wage and salary employment has been diminishing in the past few years, not only in relative terms, but, significantly enough, in absolute numbers. Now a relative fall in employment is not a rare phenomenon in developing countries, where the population growth is usually more rapid than the increase in available jobs; but an absolute fall is a phenomenon that has only been observed so far in industrial countries during economic depressions. There has also recently been some evidence of decreasing employment due to technical innovation, though new employment opportunities generated by technical change seem to act in the opposite direction; in fact, no conclusive evidence is yet available on the impact of the current technical change on employment.

TABLE 4. Evolution of employment 1960-64[1]

	1960	1961	1962	1963	1964	1965[2]
Private sector	—	307 038	289 824	245 153	247 456	—
Public sector	—	104 500	107 204	95 191	103 801	—
Total	416 951	411 538	397 028	340 344	351 257	333 755

NOTES

1. Peasant farming, military forces and domestic service in private households not included. The latter group was estimated at 23,000 in 1964
2. Preliminary data from Central Statistical Bureau

SOURCE

Employment and earnings in Tanganyika 1964, p. 2. Dar es Salaam, 1965

TABLE 5. Distribution of wage and salary employment

	Private sector				Public sector			
	1961	1962	1963	1964	1961	1962	1963	1964
Agriculture, forestry	194 700	192 924	155 506	153 410	10 258	10 921	10 026	10 719
Mining and quarrying	11 800	8 667	7 312	7 755	75	97	75	71
Manufacturing	25 700	22 299	21 310	22 594	663	1 098	902	989
Construction	14 500	15 722	10 968	11 541	27 275	25 451	17 322	22 199
Electricity and water	2 200	1 817	1 840	1 820	4 710	3 061	2 040	2 817
Commerce	17 700	16 943	16 477	17 341	—	—	—	—
Transport and communications	6 900	8 802	8 927	9 344	14 512	15 517	15 482	16 326
Services	23 800	22 650	22 813	23 651	47 053	51 059	49 344	51 220
Total	297 300	289 824	245 153	247 456	104 546	107 204	95 191	103 801

SOURCES
Employment and earnings in Tanganyika, 1962, p. 6. Dar es Salaam, 1963
Employment and earnings in Tanganyika, 1964, op. cit., p. 7

In the case of Tanzania, however, it would seem that technical change has played a very minor role in the absolute fall in paid employment. This was due mainly to the minimum wage legislation introduced in January 1963 and setting the minimum wage at 150 shillings a month (with slight zonal differences).

It should be remembered that, in Tanzania, the bulk of wage employment is provided by agriculture, more particularly the sisal plantations (see Table 5), and that no major technological change has occurred in this field. As long as there were no wage regulations, employers paid little attention to the number of permanent or seasonal workers they employed, or to the number of days actually worked by them; many workers were happy to hang around and to earn a few shillings a month. With the introduction of the minimum wage legislation, plantation managements would have had either to increase the wages paid to all workers up to the minimum or cut down employment to the strict minimum. For obvious reasons, the latter course was chosen, hence the fall in paid employment. It may be noted in this connexion that although economists willingly admit the closest relationship between the level of employment and the level of wages, no one who had tried to evaluate Tanzania's manpower needs had foreseen the possibility of an absolute reduction in employment due to the minimum wage legislation.

As can be seen in Table 4 there was a slight reversal in 1964, employment rising by about 3 per cent; this was due entirely to the growth of secondary and tertiary activities (manufacturing, construction, commerce, services). It is not possible to say with certainty whether this slight increase represents the beginning of a trend or whether it is accidental in character, for there has been again a 5 per cent drop in employment in 1965. However, should the present dynamism in

TABLE 6. Monthly average wage of African workers (in shillings)

Year	Private sector	Public sector	Average wage
1962	106	168	124
1963	143	216	165
1964	155	222	176

SOURCE *Employment and earnings in Tanganyika, 1964, op. cit.*, p. 4

economic activities be enhanced, there is likelihood that some rise in employment would follow.

Having sketched the background, we can now review critically the attempts that have been made to evaluate the demand for and supply of manpower, bearing in mind the three major factors which determine the manpower situation in Tanzania, i.e., the policy of Africanization of the Civil Service, the imperative of economic growth, and popular pressure for the development of education at all levels.

3 Manpower estimates: a critical evaluation of methods used in Tanzania

Tanzania is one of the few African countries to have a considerable amount of documentation on its human resources. Among at least half a dozen documents on manpower needs and resources produced since 1960, three merit particular attention; they are the studies by Guy Hunter, George Tobias and Robert L. Thomas. These three reports were aimed at different objectives, and are not, therefore, easily comparable; but the methods used and the results obtained lend themselves to a critical analysis.

In carrying out such an analysis, however, it must be borne in mind that the authors started practically from scratch, and that they often had to substitute experience and imagination for facts and figures which were not available. Furthermore, they had to contend with the fact that a number of fundamental methodological problems relating to manpower planning in developing countries still remain unsolved. Thus, for instance, assuming a probable rate of growth of the economy is not a manpower problem but, in the absence of an economic plan, the manpower expert is called upon to assume what the growth rate is likely to be. There is also the problem of how to determine the rates of productivity growth by sector in the absence or extreme scarcity of relevant data; or how to project the manpower pattern that would ensure an optimum utilization of professional and sub-professional personnel; or how to determine the manpower requirements of the government sector in accordance with the growth process and how to assess the manpower needs of traditional agriculture which are to be met through various government programmes; or how to assess the manpower needs of the private sector. These few examples give an idea of the complexity of the task which a manpower planner has to perform and of the difficulties he has to surmount in projecting manpower needs over the next five or ten years. With these considerations in mind, let us proceed to an analysis of the three reports mentioned above.

The Hunter study [1]

The Hunter study is not a manpower report, properly speaking; in the words of its author, it is 'simply an attempt to establish certain orders of magnitude and to provide a working model which can and should be readjusted in the light of more thorough investigation and of the future economic needs of the three countries'. The main purpose of the study was to provide an indication of the probable needs of Kenya, Uganda and Tanganyika for high-level manpower over the next ten years, primarily with a view to assisting those engaged in university planning. The great merit of this study lies in that it was the first rough assessment of the aggregate high-level manpower needs of East Africa as a whole (at that time, the East African Federation loomed large) with a view to planning the educational needs of the region. Its recommendations related mainly to desirable changes or developments in the educational system, particularly at the secondary and post-secondary levels, and to priorities which should be given to certain levels and types of education, as well as to curricula at the University of East Africa. In this respect, it was a pioneering study which contributed to the creation of a very favourable psychological climate in government quarters, as well as an important step forward in advancing the knowledge of manpower problems of the region.

On the positive side of the study, the following points should be mentioned:

1. The manpower approach to educational planning is clearly formulated, particular emphasis being laid on the post-School Certificate level.[2] The author considers that, from the standpoint of the manpower approach, the aim should be to make as many young people as possible as useful as possible as soon as

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[1] See our bibliography.

[2] The School Certificate(SC) is received following an examination which may normally be taken after four years of secondary schooling; six years is normally required for the Higher School Certificate (HSC).

possible, without prejudice to the future structure of education or to their own future careers; to this end, new centres should be created which will make possible such orientation.

2. The study recommends, as one of the first priorities, the creation of training cadres for modernizing African agriculture. While emphasizing that training for agriculture should be prosecuted through the development of extension services, it points out that it is not only the adviser, but the farmer himself who should be considered as a kind of higher-level manpower.
3. There is the suggestion that the structure of the extension services for agriculture and health, including veterinary service, should be modified by a larger use of sub-professionals, who could extend their activities to more remote areas. The author believes that the present proportion of roughly one graduate to two and a half assistant officers could be reduced to 1:4 but, unfortunately, this very pertinent suggestion could not be supported by factual evidence. A detailed job analysis would be needed to determine the right ratio. Such work has been started in Tanzania by Edward Rubin, Dean A. Lund and John B. Seal, but it has not yet gone beyond the laboratory research stage.[1]
4. Clarity in the formulation of an educational policy is one of the strongest points of the study. There is an estimate of the needs for teachers, who nearly everywhere constitute a major part of high-level manpower and raise a crucial supply problem. This is particularly the case of secondary school teachers in view of the priority which, according to the study, should be given to secondary and post-secondary education.
5. There is also the recognition of the special position of the commercial and entrepreneur class of Asian origin in East Africa. The importance of this reservoir of skills is something which seems to have escaped the attention of other manpower experts. But what are the skills that Africans would have to acquire if they were successfully to replace Asians in this sector? Though education alone does not make an entrepreneur, some education is needed over and above capital. But how much and what kind of education is a problem which needs investigation.
6. Lastly, the study stresses the need for a clearly defined strategy of human resources and for the consequent establishment of machinery capable of formulating and implementing such a strategy—a recommendation which was later taken up in the Tobias survey and implemented with considerable success.

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[1] See: *Manpower Utilization Report, Agricultural Division*, Ministry of Agriculture, December 1964; *Manpower Utilization Report, Veterinary Division, id.*, May 1964; *Manpower Utilization Report, Forestry Division, id., June* 1965; and *Manpower Utilization Report*, Ministry of Communications and Works, May 1965.

Among the weaker points of the study, the following should be mentioned:

1. The study was based primarily on the official emuneration of employment and a series of personal interviews, and this is not an adequate basis for formulating long-term recommendations. Experience has shown that an inventory of manpower stock broken down by specific occupations is an essential condition for reasonably reliable projections of manpower needs. Such an inventory, however, was not available at the time of the study and the author had to make do with what little information was available. Even so, he put forward proposals which appear eminently sensible.
2. The definition of manpower categories lacked precision. All high-level manpower was divided into two categories: category I comprised professionals, technologists, senior administrators and managers; category II, technicians, teachers with secondary education, junior administrators and managers, supervisors, fully trained nurses and senior members of the extension services. Although no classification system can pretend to be perfect since the relationship between occupation and educational level cannot always be clearly defined, this particular grouping has the disadvantage of putting together into one category too many occupations with very different levels of education. According to the author himself, nearly half of the occupations in category I may involve no university training, and at least a quarter of those in category II may not require secondary education. Such margins are too wide to allow for the planning of educational output in accordance with the proposed categories; a sub-division into three or even more categories would make for greater precision in defining the necessary levels of educational attainment.
3. There is no empirical evidence for assuming a constant correlation between the relative size of employment categories, on the one hand, and changes in national income, on the other. The formula proposed by the author, that the rate of growth of national income should be related to the rate of growth of category I and category II manpower in the ratio of 1:2:3 is not borne out by the practical experience of many developing countries.
4. Lastly, no sufficient consideration is given to sources of high-level manpower supply other than the formal education system. But in developing countries, in-service training and various forms of upgrading, such as evening, refresher and sandwich courses, must also play an important part in meeting manpower needs. Furthermore, the very important practical question from the standpoint of manpower policy, of what is to be done with those who fail the School Certificate or the Higher School Certificate, has not been dealt with at all.

The final result of the Hunter study is summarized in Table 7.

The general conclusion to be drawn from this table is that Tanzania's own educational output will be insufficient to meet the anticipated manpower needs,

TABLE 7. Higher manpower requirements and educational output in Tanzania, 1961-71

Phase I 1961-66	Stock 1961	Wastage 1961-66	Net increase of employment[1]		Total requirements		Output from the educational system[2]	
			Lower	Higher	Lower	Higher		
Category I	4 480	1 600	890	1 350	2 500	2 950	1 650	HSC+
Category II	12 700	3 650	3 810	5 700	7 500	9 350	8 200	SC+
Total	17 180	5 250	4 700	7 050	10 000	12 300	9 850	

Phase II 1966-71	Stock 1966[3]	Wastage 1966-71	Net increase of employment[1]		Total requirements		Output from the educational system[2]	
			Lower	Higher	Lower	Higher		
Category I	5 400	1 080	1 080	2 700	2 100	3 780	2 000	HSC+
Category II	16 500	3 300	4 950	12 375	8 250	15 675	12 000	SC+
Total	21 900	4 380	6 030	15 075	10 410	19 455	14 000	

NOTES

1. In Phase I, 'Lower' represents the increase of employment corresponding to a 10 per cent growth of GNP during the five-year period, 'Higher' to a 15 per cent growth; in Phase II, the corresponding growth rates are 10 and 25 per cent respectively
2. Output from education is divided into two levels: a group entering vocational training from secondary form 4, and a group continuing to H.S.C. and university or equivalent education
3. Rounded figures corresponding to the hypotheses of lower rate of growth

SOURCE

Guy Hunter, *High-level manpower in East Africa. Preliminary assessment*, p. 13. London, Institute of Race Relations, September 1962

whether the higher or the lower rate of economic growth is assumed. Clearly, the prospects would be much better in the latter case; the supply of category II manpower would exceed the projected demand by over 20 per cent in the period 1961/62-1965/66, and by over 40 per cent in the period 1966/67-1970/71; but the supply of category I manpower would fall short by 34 per cent and 8 per cent respectively during the two periods.

The author himself deliberately avoids showing shortfalls and surpluses in the table, calling them 'somewhat unreal concepts'. He admits, however, that a shortage of trained manpower may slow down economic growth; so a shortage is something real and not theoretical. Nor can one agree with the proposition that a surplus is 'unreal' because it merely tends to raise educational requirements by employers for the same job categories. Such a view may have some validity in the case of secondary school leavers, but it certainly cannot be applied to university graduates—as is shown by the classic examples of India and some other countries, where the surplus of certain categories of high-level manpower has raised serious social and human problems. In the case of Tanzania, however, the conclusion must be that skills will have to be imported from abroad for the next ten years at least.

It is difficult to say to what extent the Hunter study alone influenced the decisions relating to the development of the University of East Africa, because the

Tobias survey became available soon afterwards and the Thomas survey appeared within the next two years. But the Hunter study was the first important assessment of the needs for high-level manpower and it was undertaken on the initiative of the university council, which required information for operational purposes.

The Tobias survey[1]

The Tobias survey is a landmark in manpower surveying in Tanzania, because it is the first systematic inventory of high-level manpower by broad occupational classes, showing the present manpower resources and providing projections of manpower requirements in the different categories within these broad classes, together with an analysis of possible sources of supply and likely shortfalls. Its main weakness lies in the fact that the assessment of future manpower needs is not related to a specific economic programme. But this weakness was inevitable as, at the time of the survey, Tanzania had no development plan; and manpower projections, in both the public and private sectors, were largely based on informed guesses and estimates by employers. The survey, however, provided a starting point for formulating a manpower policy, and its aim was achieved in that most of its recommendations were adopted by the government.

The method adopted consisted of a series of inquiries in government circles and the business community. Employers in both the public and private sectors were asked to report the number of people employed as of the end of March 1962 and to project their own production plans for two and five years ahead, converting them into occupational requirements by level of qualification. The survey was limited to non-agricultural employers, among whom only those with fifty workers or more were selected for interviews. The 115 employers thus included were believed to cover 71.5 per cent of the total non-agricultural employment in the country. Agriculture was only covered in so far as government employment of agricultural technicians was concerned. Since sample studies had shown that the proportion of high-level manpower in the private sector of agriculture was only 2 per cent and that nearly all agricultural specialists were employed by the government, it could be assumed that the needs of agriculture were actually taken into account.

The occupational coverage was as follows: (a) administrative occupations which normally require twelve years of education plus five years of practical experience or, in some cases, university-level training; (b) professional occupations which require degrees or certificates or licences to practise, usually after twelve years of education plus four or five years of further university education or specific training;

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[1] See our bibliography.

(c) technical occupations which require at least three years of post-secondary training and are filled by workers who work in direct support and under the immediate supervision of professionals; (d) highly skilled manual occupations requiring two, three or more years of combined training and experience in a specific job. Foremen and skilled manual workers come into this category.

Since both the administrative and professional skills were in very short supply in Tanzania and since both require substantial education and training, it was decided not to treat them separately, but to group them in a single category. There was also some difficulty in separating professional and technical occupations. For instance, according to the ISCO system of classification,[1] medical assistants are regarded as technicians, for they have only three years of post-secondary training, but all primary school teachers are regarded as professionals; in reality, the former worked at a professional level, while the latter had had for the most part eight years of schooling and two years of training.

Replacement rates were set at different levels for the various racial groups; 16 per cent per annum for Europeans, 12 per cent for Asians, and 4 per cent for Africans. However, in the absence of a plan for Africanization, the replacement rate for Europeans was no more than an informed guess, and the assumption that 80 per cent of the currently employed Europeans will have been replaced by the end of the five-year period proved to be considerably exaggerated. It is true that this figure was obtained by a multiple counting of Europeans moving in and out of the same job and that it was intended to measure total recruitment during the period.

The results of the Tobias survey are summarized in Table 8.

As can be seen, the requirements for administrative and professional staff would mean a doubling of the 1962 complement by 1967. As far as supply was concerned, the author came to the conclusion that it would amount to no more than 2,267, as against a total requirement of 8,054. (See Table 8.) It should be noted that this estimate of supply only took account of trainees earmarked for a specific employment and that secondary school leavers and arts graduates were not credited to any occupation. But even if they were counted, supply would fall considerably short of requirements.

The author thinks that it would be futile to consider which high-level occupations will exhibit a shortfall of supply over demand, because such a question would imply that some occupations are in abundance, others in balance, still others in deficit; whereas Tanzania would be short of high-level manpower in all occupations. The problem, therefore, is not one of particular deficits, but one of establishing priorities in favour of the occupations which are most urgently needed. These include practically all the professions, with special emphasis on secondary

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[1] ILO, *International Standard Classification of Occupations*, Geneva, 1958.

TABLE 8. High-level manpower requirements by occupational group, 1962/63–1966/67

Occupational group	In current employment	Net additions in 5 years	Replacements in 5 years	Gross additions	Percentage of present employment
Grand total	*9 331*	*3 819*	*4 235*	*8 054*	*86*
Administrative and professional—total	5 619	2 573	3 033	5 606	99
Of which					
Engineers	390	182	209	391	100
Scientists	784	462	434	896	114
Medical	1 100	578	674	1 252	113
Teachers	1 272	673	714	1 387	109
Other professions	511	292	201	493	96
Administrative	1 562	386	801	1 187	75
Crafts - total	3 712	1 246	1 202	2 448	65
Of which					
Mining	23	11	9	20	86
Transport and communications	174	80	71	151	86
Textiles	45	—	9	9	20
Metal working	1 706	709	599	1 308	76
Electrical	483	201	172	373	77
Construction	1 152	181	313	494	42
Food and chemical	29	10	3	13	44
Miscellaneous	100	54	26	80	80

SOURCE
High-level manpower requirements and resources in Tanganyika, 1962-67, p. 24. Dar es Salaam, Government Printer, 1963

school teachers, agricultural technicians, engineering, legal and management personnel, and the medical profession. Among the craft occupations, the most urgently needed are those in modern crafts (metal working, precision measurement, electricity and electrical machinery) which require a much higher educational level than the older traditional crafts such as shoe-making, tailoring, stone-masonry, painting and tile-setting.

Among a number of important recommendations concerning education and training, the following deserve particular mention: (a) the greatest emphasis to be laid on the development of secondary education; (b) a greater technical content to be woven into secondary education; (c) introduction of some elements of craft training, shop practice, office practice, domestic science (for girls) into secondary school curricula; (d) provision of vocational counselling and assistance to secondary school pupils by 'career masters'; (e) a better adaptation of courses to either the aptitudes of the pupils or the economic needs of the country; (f) a revision of trade school curricula and introduction of evening courses, sandwich courses, etc. with a view to meeting manpower requirements at a lower level.

It may be noted that most of these recommendations coincide with those of the Unesco Educational Planning Mission (October 1962) and that many of them have since been implemented.

Apart, however, from these positive aspects, there were also omissions and shortcomings in the report, some of them unavoidable. For instance, the way in which the net increase of manpower requirements in the public sector, and partly also in the private sector, was determined lends itself to a certain amount of criticism. The only known way in which this increase in the public sector can be determined is by applying the so-called 'social growth method', i.e., deriving manpower needs from the desirable levels of activity in various fields as determined by the government. The criticism bears, therefore, not on the method itself, but on its application in conditions in which it simply could not work properly. In the absence of a comprehensive plan reconciling the competing claims of the various government services and balancing them against the resources available, inquiries such as those of the Tobias survey can lead to misleading results. Not only do all government services tend to claim too much, but they are in no position to assess their manpower needs until they know exactly the size and nature of the tasks they will be called upon to perform. As long as there is no over-all development plan, the estimates of manpower needs made by the various government departments represent no more than assumptions and expectations that may prove right or wrong. A manpower survey based on such assumptions is at best the sum of working hypotheses. They may include unfilled posts in the establishment which no longer correspond to real needs because the projects which necessitated them were dropped from the programme of government activities. To avoid a serious discrepancy between real and projected needs, there should thus be a continuous revision of manpower estimates in accordance with the changing content of the plan.

Another drawback of the social growth method is that the pattern of manpower requirements is nearly always projected by extrapolation. In other words, the occupational composition of employment, i.e., the relationship between the various manpower categories, is left unchanged. But this relationship is, in fact, constantly being changed by technical innovation, better education of manpower and improvements in organization.

In the present state of knowledge, these two drawbacks of the social growth method cannot be avoided. But there is a growing realization that an over-all development plan is a necessary—though not sufficient — condition of obtaining reliable projections of manpower needs, just as a detailed job analysis is a necessary condition for improving the accuracy of estimates of manpower requirements.

Another weak point of the Tobias survey—and of all other surveys carried out in Tanzania and elsewhere—lies in the estimates of the net increase in manpower requirements in the private sector. Here the margin of possible error is directly related to the size of the private sector: the greater its relative size, the bigger the possible error. In this respect, centrally planned economies enjoy a clear advantage over market or mixed economies in that the objectives of the plan are mandatory and the element of the unknown with regard to production targets is reduced to the minimum. Where the targets are not mandatory, as is the case of indicative planning and even more so of a free market economy, the task of the manpower planner is infinitely more complicated, for he has to deal with a multitude of decision-makers whose interests are not necessarily in harmony with each other. The hope expressed in the Tobias survey that, since employers apply different assumptions to their growth prospects, the errors inherent in their estimates will compensate each other, thus leading fairly close to a true final result, can hardly be accepted without qualifications. Can the error of a textile manufacturer compensate that of a foodstuff producer, or the miscalculation of a motor manufacturer offset that of a manufacturer of chemicals? They all require manpower with different qualifications and a different educational training, and their respective errors are not likely to be compensated by each other. Moreover, limiting the inquiry in the private sector to firms employing fifty or more workers may be a further source of error. It is true, no doubt, that in the present situation these are the establishments which have the greatest concentration of high-level manpower. But does this mean that in future employers of less than fifty workers could not advantageously make use of professionals or technicians? What does the growing trend of small enterprises in mining, manufacturing, etc.,imply in terms of manpower requirements? These questions should be studied before the proposed limitation can be accepted as entirely valid.

The exclusion of self-employment and of clerical occupations leaves a noticeable gap in the Tobias survey, though the author recommended the inclusion of these categories in future surveys. This gap was, in fact, filled in the Thomas survey. This question is particularly important with regard to clerical occupations, for in all ministries and government agencies in Tanzania the personal secretaries to high officials are mostly expatriates or, in a few cases, Indians. The cost of importing these secretarial skills is by no means negligible, and the government has appointed a committee to investigate the problems of training clerical personnel. The report of this committee, at this writing, was being examined by the government.

Another criticism which can be levelled at the survey has already been mentioned, i.e., the projection of the existing occupational composition of manpower. In the colonial days, when nearly all the skills were imported, the policy was to bring in professionals in preference to non-professionals, for the expenses involved in the transportation and repatriation were more or less the same for both. As a result, the ratio of professionals to non-professionals was very often 1:1 or even 2:1, while in the developed countries it varies between 1:3 and 1:5. However, in order to ascertain what this relationship should be in Tanzania, a good deal of research would have been necessary, and the Tobias team had no opportunities for such research.

Lastly, a problem in the survey to which there is no easy solution in sight is how to forecast the evolution of productivity in developing countries. To base such forecasts on the growth rates of developed countries or on hasty generalizations may do more harm than good. This is a problem which requires a thorough study, particularly with regard to developing countries. It may be noted, in this connexion that the Tanzanian Government has decided to set up a Productivity Institute with the technical assistance of the International Labour Organisation (ILO).

On the whole, however, the Tobias survey of high-level manpower requirements and resources was a notable achievement which had a direct impact on manpower and educational planning in Tanzania. The initial estimate of manpower needs of the five-year plan was derived by extrapolating the data of the Tobias survey. The guide compiled by the Ministry of Economic Affairs and Development Planning for the Ministry of Education in preparing its development policies and programmes was also largely based on this survey. No doubt, its estimates were modified and improved in the light of other considerations bearing on educational development, but it greatly contributed to the formulation of major policy decisions in the field of education.

The Thomas survey [1]

This survey was carried out under the direction of Robert L. Thomas, an expert of the Ford Foundation, in the middle of 1964 and published at the beginning of 1965. Although it was conducted within the same terms of reference as the Tobias survey, it differs from the latter in at least four important respects:

1. It was geared to the economic development plan, whereas the Tobias survey was carried out prior to the formulation of the plan; moreover, the Thomas survey covers a different time period (1964/65-1968/69 instead of 1962-67).
2. Though both surveys are assumed to have been carried out by the same basic method, the techniques used for projecting manpower requirements differ in many ways. Thus, in the public sector, the Tobias survey had to rely on personal inquiries and assumptions of the ministries concerned, whereas the Thomas survey could base its data on decisions taken by the ministries concerned and modified in some cases by the Planning Directorate. For instance, when the latter provided the Ministry of Education with rough requirements of secondary school output, the ministry was able to produce estimates of the number of secondary school teachers required. Again, while the Tobias survey had to base its calculations of the rate of withdrawal of expatriate personnel on

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[1] See our bibliography.

assumptions, the Thomas survey could rely on a clearly defined government policy of Africanization which provided a much firmer basis for calculating the differential replacement rates. These were estimated at 4 per cent per annum for Africans, 7 per cent for Asians and 5 per cent for Europeans—a result substantially different from that of the Tobias survey.

As far as the private sector is concerned, the survey makes it quite clear that no satisfactory method has been evolved for estimating the 'net increase' portion of manpower requirements owing mainly to lack of adequate statistical information. But whereas the Tobias survey was based mainly on personal estimates of employers for the next two and five years, the Thomas survey tried to relate the 'net increase' portion of manpower requirements to the patterns of expansion of the various sectors as laid down by the plan. This method involves two stages; in the first, total employment in each sector is estimated on the basis of employment in the reference year, the plan target for GDP in the final year, and an assumed rate of productivity growth per worker; in the second stage, an occupational matrix is constructed by calculating the proportion of each high-level occupation in total employment in the base year and applying it to the employment total computed for the final year. The difference between these two figures is considered as the 'net increase' portion of total requirements.

3. The conclusions concerning the educational system are much more precise in the Thomas survey than in the Tobias survey. This is only natural, as the author, in his capacity as Manpower Adviser to the Government, has taken an active part in the work of the Manpower Standing Committee, which plays an important role in controlling the implementation of the plan.
4. The occupational coverage of the Thomas survey is more complete than that of the Tobias survey; it includes, for instance, skilled office workers and self-employed people in non-agricultural occupations. The definition of the occupational classes is also more precise than in the Tobias survey. From the standpoint of educational and training qualifications, the author distinguishes the following four categories: category A, normally requiring a university degree or its equivalent; category B, normally requiring one to three years of formal post-secondary (form 4) education or training; category C, normally requiring a secondary education (skilled office workers, skilled manual workers in modern crafts); category D, requiring a fairly high degree of manual skill but no secondary education.

The major weakness of the Thomas survey, fully recognized by the author, lies in two basic assumptions relating to the estimates of the 'net increase' in manpower requirements, particularly in the production sectors.

The first assumption is that productivity will increase at 2.5 per cent per annum in the private sector and at 3.4 per cent in the public sector during the five-year period ending in 1970, and at 2.5 per cent in both sectors during the subsequent two five-year periods ending in 1980. The only guide for such an arbitrary rate was the example of the United States of America where productivity increased at a rate of 2.6 per cent per annum between 1929 and 1961 and the French example of an estimated increase of 4.4 per cent per annum between 1959 and 1970. The absence of any relevant data for Tanzania left the author no option but to use data available for other countries. However, the examples of the U.S.A. in 1929 or of France in 1959 hardly seem relevant for obvious reasons. It would have been much more pertinent to assume a rate of growth typical of a developing country with a similar economic structure, such as Uganda, for instance, where it was found to be one per cent per annum (a figure perfectly well known to the author). It goes without saying that a lower rate of productivity growth would have considerably affected the estimated manpower requirements.

The second assumption concerns the occupational matrix of manpower which was projected exactly as it existed in 1964. Now all manpower experts are agreed that there is no unique relationship between outputs and manpower inputs in the various sectors. The occupational composition may vary considerably according to the techniques used or to the organizational framework introduced, while the output remains the same. This is particularly the case of manufacturing industries and, to a lesser degree, of construction, mining and transport. It has been recognized that the top-heavy structure of Tanzania's Civil Service inherited from the past must be changed so as to make fuller use of middle-level skills without affecting over-all efficiency. The shifts which will thus take place within the occupational mix may be quite considerable and will result in manpower requirements significantly different from those derived from the 1964 occupational matrix. Unfortunately, owing to the lack of relevant information, the 1964 matrix had to be taken as the basis for manpower projections.

One of the strongest features of the Thomas survey lies in its estimates of manpower supply and demand and its recommendations for meeting the manpower needs of the country. First, the report stresses the importance of fully implementing the plan, including the field of education. It considers—and this is also our view—that domestic resources constitute the main source for financing the development of education, and that foreign aid can provide only supplementary, though highly important, resources.

Second, the survey lays strong emphasis on the output of secondary schools (form 4 and form 6) and advocates a ratio of 4:3 between science and arts for the Higher School Certificate.

Third, it recommends that education at university level, both in East Africa and overseas, be as closely related to the country's programme of economic and social development as possible. In this connexion, the tied bursary scheme, i.e., the awarding of scholarships strictly in accordance with the country needs for specific skills, is a powerful government instrument for ensuring the implementation of the manpower programme.

Lastly, the clear distinction drawn between the sources of supply for categories A and B manpower, on the one hand, and category C manpower, on the other, is a methodological contribution of a general character. The report points out that categories A and B require a substantial amount of formal education and/or training of an institutional character, and that the sources, volume and timing of the supply are, therefore, easy to identify. The situation is very different in the case of category C manpower, where the great majority acquire their skills wholly by non-formal means, mainly by working on the job. This raises the controversial question of vocational and technical education versus on-the-job training. We agree with the author that there are no known techniques for determining the optimum number of those who should undergo formal training and of those who should acquire their skills non-formally; and there is no conclusive evidence in favour of either formal or non-formal training of category C manpower. The author's preference for on-the-job training certainly merits careful considerations; such an approach not only offers financial advantages, but also makes for closer links between the skills produced and the demand of the market.

The manpower requirements of the Thomas survey are summarized in Table 9. The full estimates will be found in Appendix A.

TABLE 9. High-level manpower requirements by level of education, 1964/65-1968/69

Manpower group	In current employment	Replacement and current vacancies	Net increase of employment	Total requirements	Percentage of present employment
Category A	2 801	1 582	1 323	2 905	103
Category B	5 778	3 277	3 285	6 562	110
Category C[1]	20 910	7 242	10 020	17 242	85
Total	29 489	12 101	14 628	26 709	99

NOTE

1. Sixty-five per cent of this category are skilled office occupations

As can be seen from the table, the total demand for manpower in categories A and B will require the production, during the five-year period, of more than the present complement in these two categories. This conclusion is fairly close to that of the Tobias survey, though the actual numbers differ significantly owing to the larger occupational coverage of the Thomas survey.

This last manpower survey seems to be one of the most elaborate and comprehensive ever undertaken in African countries. It certainly provided new guide-lines for a further refinement of manpower policy and educational planning in Tanzania, which will be discussed below.

The problems facing the manpower planner in African countries after independence have been due, first, to the political imperative of creating a national public administration and, second, to economic and social necessities. The solution to these problems required certain steps:

1. To determine the optimal—and realistic—replacement rates of former colonial civil servants in the light of the government's Africanization policy.
2. To determine the most efficient ways of utilizing the available stock of manpower by changing the manpower pattern inherited from the colonial period, particularly the ratio of professionals to sub-professionals.
3. To assess the net increase in manpower requirements in terms of a few—usually three or four—categories of manpower corresponding to different levels of educational qualifications, and also by occupational classes broken down by occupations for the purposes of short-term planning; this is the complicated task, for, apart from methodological difficulties, it involves a considerable amount of uncertainty about the prospects of economic growth and of reaching the planned targets.
4. To identify the most economical ways of meeting manpower requirements from alternative sources of supply, such as formal education, training on the job, or a combination of both, and also recruitment from overseas;
5. Lastly, to pursue actively the implementation of the human resource development programme.

It is with a view to performing all these tasks that an inventory of manpower resources and an appraisal of future manpower supply and demand had to be carried out. In this connexion, the three studies reviewed above constitute a gradual approach towards the evaluation of the real needs of Tanzania and towards the ways and means of meeting these needs. This is a long and thorny process of successive approximation by continuous reappraisal of a continually evolving situation. Even so, none of the three studies can possibly claim to be faultless. All are based on the assumption of a rather high rate of economic growth, and none envisages the possibility that such an ambitious target may not be reached. In view of the absolute fall in wage and salary employment and of the fact that employment opportunities lag behind the growth of the labour force, it would seem that optimism has prevailed over realism in all three reports.

While a more cautions approach will be needed in the future, it does not seem that fluctuations in GDP will affect the validity of the manpower approach as it is now conceived in Tanzania. Whatever these fluctuations, the general orientation of manpower policy, its major options, such as the priority given to secondary over primary education, or the preponderance of science subjects over arts subjects at the secondary and post-secondary level, cannot be changed significantly. And any possible surplus of high-level manpower due to a slowdown in economic growth is likely to be absorbed during the next few years through the acceleration of the Africanization programme. As long as there is a considerable number of expatriate skills in the country, there is a cushion to soften the effects of any over-production of highly skilled manpower. The real danger of over-estimating high-level manpower needs will arise when the policy of Africanization has been carried out.

A last point which may be considered here concerns traditional subsistence agriculture. It would be inaccurate to say that the three surveys analysed above have left the agricultural sector out completely. To the extent that provisions are made in the plan for government activities aimed at increasing productivity and living standards in agriculture, they include all high-level skills needed in that sector. The Hunter study tried even to quantify the manpower requirements of the private sector in agriculture, and both the Tobias and Thomas surveys estimated these requirements at less than 2 per cent of the total high-level manpower employed in agriculture. The question is whether the provisions made by the government to modernize traditional subsistence agriculture are adequate, and if not, what other measures could be taken to this end. The answer to this question would help to avoid a real danger, that of a dual economy based on a large, stagnant traditional sector, and a small dynamic, modern sector, with all its economic, social and political implications characteristic of nearly all developing countries.

Part Two

Manpower programmes and educational planning

Whatever may be said of the cultural importance and value of education, it would hardly perform its social function if it did not serve economic development to the fullest possible extent. This means that the skills produced by the educational system must correspond, in timing, numbers and quality, to the requirements of society and, not least, that they must be produced at a minimum cost to society. This is the essence of the manpower approach to educational planning.

Tanzania was among the first African countries to realize that her economic development would be doomed to failure without a vigorous effort directed at meeting manpower needs, especially those of highly qualified manpower. There are generally four broad lines of action open to any government for this purpose: (a) more efficient utilization of high-level manpower already in existence; (b) upgrading by means of in-service training of currently employed lower-skilled workers; (c) expansion of formal education and training; and (d) recruiting or retaining of expatriate skills.

It would be difficult to assess the relative importance of these four complementary ways of meeting manpower requirements, for it varies from country to country. It would seem, however, that in most of Africa south of the Sahara, the lion's share of manpower requirements must be met by formal education and training. This does not mean that the other methods can be considered as marginal; but the general level of education of the African population is so low that, unless an effort is made to increase many times the number of people with any education, upgrading and better utilization of available manpower will be limited to a very small number indeed. Hence the strategic role of formal education in the campaign aimed at providing African societies with skills and knowledge needed for development.

1 Manpower requirements and formal education

When, after independence, Tanzania embarked upon a programme of economic development, it soon became apparent that the educational system was utterly inadequate to meet, quantitatively and qualitatively, the estimated manpower requirements. These are shown in Table 10.

TABLE 10. Estimated gross requirements of the non-agricultural labour force by level of education, 1962-70

	Category A	Category B	Category C
Assumed annual percentage increase in total employment	5.8	7.5	6.8
Employment level in 1962	3 350	2 220	24 140
Net increase required 1962-70	1 900	1 740	16 660
Number required as replacements 1962-70 (retirement, death, Africanization)	1 280	710	6 260
Gross requirements 1962-70	3 180	2 450	22 920

SOURCE
A guide for the Ministry of Education in preparing its development policies and programmes, Ministry of Development Planning, 12 September 1963. (Unpublished.)

These figures were submitted to the Ministry of Education in September 1963 and served as a basis for preparing the draft educational plan for 1964/65-1968/69. They were amended at the request of the educational authorities, notably as regards the level of teachers' qualifications at the end of the plan period, the change in level of entry to all teacher-training colleges from standard VIII to form 4 increasing requirements for category B from 2,450 to 5,900 with a corresponding decrease in category C manpower.[1] This assessment, too, was later adjusted to targets set for each sector of the economy by the development plan 1964-69, and more precise data were supplied to the educational authorities by the Thomas survey of 1964. But whichever estimate is taken, the inadequacy of the educational system in 1961 to meet such requirements is clearly apparent in Table 11.[2]

While at the base of the educational pyramid about 50 per cent of the relevant age group was believed to be enrolled, the proportion reaching form 6 was very small indeed. According to the estimates of the Unesco mission, only 6 per cent of the corresponding age group reached standards VII and VIII of primary school;

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[1] In Tanzania primary grades are referred to as 'standards' and secondary grades as 'forms'.

[2] All statistics on education, except when otherwise specified, are taken from the Ministry of Education's *Annual Reports* for the corresponding years.

TABLE 11. Enrolment by year of study, 1961

Primary[1]		Secondary	
Standard I	121 386	Form 1	1 496
Standard II	95 391	Form 4	1 667
Standard V	19 391	Form 5	236
Standard VIII	11 740	Form 6	179

NOTE

1. Public schools only, i.e., aided schools, for which there was a satisfactory degree of statistical accuracy

and the drop was even greater among African children, of whom less than one per cent were entering secondary school. The attrition rate was particularly high at all principal stages of the educational system: between standards IV and V, standard VIII and form 1, and forms 4 and 5. If this ladder-like structure of the educational system can be attributed partly to the fact that, in the past, the intake into education was considerably smaller, it was due mainly to the lack of places for continuation of studies beyond lower primary; at that time, for instance, there were only four secondary schools in the country offering forms 5 and 6 and one school for Europeans which admitted a few Africans. The situation was also reflected in the number of failures at School Certificate and Higher School Certificate examinations. Thus, in 1961, there were 1,197 passes for 1,603 candidates for the School Certificate, and seventy passes for 157 candidates for the HSC. It was estimated that only 407 African boys and thirty-two African girls passed the School Certificate in 1961, and, in its projections for 1961-71, the Ministry of Education estimated that failures for both certificates would be no less and often more than 30 per cent. The passes at both examinations amounted to 1,267 in 1961, whereas the annual average requirements for the period 1962-70 were estimated at 2,430.

The situation was even more unsatisfactory at the post-secondary level. While the average annual requirements for graduates were estimated at almost 400, the combined output of Tanzanians from university colleges of East Africa and foreign universities was expected to amount to 145 in 1962. (See Table 12.)

The number of university-course students at other post-secondary institutions

TABLE 12. Post-secondary education of Tanzanians in 1961

	East Africa university colleges	Universities overseas	Other post-secondary institutions overseas
Total enrolment	205	349	804
Those taking science and engineering	62	83	163
Completing course in 1962	56	89	251
Those taking science and engineering	17	13	17

overseas was not known, but it could hardly have been more than a few dozen. It should also be noted that, at that time, the proportion of graduates in science and engineering was just over 20 per cent of the total. To change this pattern was even more difficult than the mere quantitative expansion of higher education. Clearly, the educational system had to be considerably expanded, its structure remodelled, the quality of education improved and the wastage reduced.

But the specific needs for high-level manpower became known only at the end of 1962 and, with more precision, in 1964. It is interesting to note, however, that some of the major recommendations of the Unesco mission of 1962 and the general orientation of the three-year plan 1961/62-1963/64 for the development of education were substantially in line with the recommendations of the subsequent manpower surveys. Naturally, the plan also had to take account of considerations other than economic needs, but the latter constituted the basic parameter of the educational plan 1964-69, whose main objectives, as defined by the Ministry of Education, were (a) to meet the economic requirements for high-level manpower; (b) to ensure that the quality of primary education is maintained at a level adequate to lay the foundations of permanent literacy; (c) to progress towards the long-term aim of achieving self-sufficiency, both qualitative and quantitative, in the supply of school teachers.

In the words of the five-year plan:

> 'This education policy admittedly differs in the short run from humanitarian ideals which attach great importance to moulding human minds and strive to have the greatest number possible benefit from education as a source of moral enrichment and aesthetic satisfaction. Indeed, it should be stressed that the results of this idealistic position are most frequently ephemeral and even become harmful to society as a whole when not accompanied by a simultaneous improvement of material living standards. With the available financial resources for economic and social development of the country as scarce as they are, the government has henceforth decided to pursue a policy of educational development in line with economic requirements.'

Before analysing the specific measures taken by the government to this end, it should be noted that the allocation of resources to education has considerably increased in the past few years. It rose from £1.1 million for capital expenditure and £3.9 million for recurrent expenditures in 1961/62 to an estimated £2.6 million and £5.9 million respectively in 1964/65. In relative terms, this represents an increase from 15.8 per cent of the total government budget to 18.5 per cent for recurrent expenditures, which are to be maintained at an average of 19.1 per cent during the five-year plan period, while capital expenditures are to remain unchanged at about 14 per cent. Under the plan, government expenditures for the five years are scheduled to reach £16.9 million for capital projects and £35.5 million on recurrent account, totals to which should be added the spending of local authorities which now assume, with the aid of the government, financial responsibility for primary education.

Among the measures taken by the government, perhaps the most important was the highest priority given to secondary education.

The place of secondary education

All the manpower surveys made abundantly clear the vital role of secondary—and higher—education, especially with a technical bias, in meeting high-level manpower requirements. Since secondary school capacity was extremely limited, the obvious conclusion was that its expansion should receive top priority with the first call on educational resources. This basic choice had been strongly recommended by the Unesco mission of 1962 and adopted in the three-year educational plan, but the subsequent manpower surveys, in confirming the soundness of this approach, also provided more precise data about the required expansion.

In accordance with the estimates of manpower requirements, the share of secondary education in the total projected outlay for education has been considerably increased as compared with the previous plan. It rose from 16.8 per cent in 1961 to 20 per cent in the plan estimates of recurrent expenditures, whereas the corresponding share of primary education fell from 66.3 to 54.3 per cent.[1] The fact that secondary education still takes a smaller share than primary education in no way contradicts the government's intentions; in deciding the distribution of resources between the different levels of education, the government first allocated resources to secondary and post-secondary education in accordance with manpower needs, and only then decided on the possibilities of financing the expansion of primary education.

TABLE 13. Financial allocations for the development of education 1964-69

	Capital	Recurrent
	(£ thousand)	
Higher	4 902	4 417
Secondary	3 251	10 002
Technical	1 500	1 800
Primary	5 000	13 103
Teacher training	2 000	3 234
Other	250	2 950
Total	16 903	35 506

SOURCE Tanganyika. *Five-year plan...*, op. cit., pp. 67-68

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[1] See J.B. Knight, *The Costing and Financing of Educational Development in Tanzania*, in Vol. II of this series, Paris, Unesco/IIEP, 1969, Chapter 7, Table 33.

TABLE 14. Development of secondary education, 1959-69

	Actual					Planned					
	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Entrants to secondary school (form 1)[1]	4 073	4 242	4 838	4 810	4 972	(5 302)[2] 5 250	(5 915)[2] 5 705	5 915	6 195	6 475	6 755
Number of pupils in School Certificate class (form 4)[1]	964	1 343	1 667	1 990	2 938	4 165	4 900	5 040	5 355	5 705	5 915
Entrants to Higher School Certificate course (form 5)			236	286	497	(666)[2] 680	800	840	880	1 080	1 220
Number of pupils in Higher School Certificate class (form 6)	25[3]	125	179	199	258	(462)[2] 520	680	800	840	880	1 080

NOTES

1. These figures indicate the number of places according to the 1964-69 plan. They exceed the number of pupils, due to wastage, by approximately 10 per cent. It is expected that wastage will decrease sharply, starting from 1964, due to the abolition of secondary school fees
2. Actual enrolments
3. Non-African pupils only

SOURCES

Ministry of Education. *Annual reports, 1959 to 1963*

Tanganyika. *Five-year plan, op. cit.*, vol. II, pp. 102-103

The aim of this great effort is to increase the output from secondary schools by 85-100 per cent during the five-year period. As can be seen from Table 14, this total will amount roughly to 25,000 during the five years. Since the beginning of 1964, secondary education has been free so as to permit all able pupils to continue their studies irrespective of the financial situation of their families. This decision, fully in line with the priority treatment of secondary education, is expected to reduce considerably wastage at this level. In 1964, the secondary output (form 4) exceeded for the first time the numbers needed for employment and for further education by 350, and in 1965 by 1,800. This enabled the authorities to start drawing up plans for Africanization of the private sector.

However, despite these increases, secondary enrolment will fall far short of the Addis Ababa target of a 30 per cent enrolment ratio by 1980. The enrolment ratio is expected to rise from the present figure of less than 2 per cent to 2.7 per cent by 1969. But it is expected that, by the end of the plan period, the output of secondary schools will roughly meet the anticipated manpower requirements, and that the present gap between supply and demand will have been substantially narrowed or even eliminated.

Apart from this quantitative expansion, a major change is envisaged in the orientation of the secondary school output with a view to meeting manpower needs. Most of the urgently required high-level specialists, such as engineers, agronomists, physicians and graduate secondary teachers in science, call for a strong scientific bias in forms 4, 5 and 6. But while the number of secondary school leavers has been steadily increasing in recent years, no corresponding increase has taken place in university enrolments for courses leading to the above occupations, mainly because—owing to the lack of science preparation in secondary schools—few students could qualify for entry to such courses. Steps have, therefore, been taken to raise the ratio of science to arts pupils in form 6 to 4:3 beginning in 1965. This is by no means an easy task; in 1964, for instance, the number of pupils who sat for HSC-science was almost the same as that of pupils who sat for HSC-arts, but a substantially greater number of failures in the former brought the ratio down to 4:5.2. The measures taken to cope with this situation include the recruitment from abroad of secondary science teachers, technical improvements of school laboratories, and improvements in the quality of primary education.

The place of primary education

All this has meant, of course, a major policy decision with regard to primary education; the latter will be expanded only to the extent necessary to maintain the present enrolment ratio. In other words, the projected increase in places will keep pace with population growth, estimated at about 2 per cent per annum. This involves opening about seventy new standard I streams a year to bring the intake to about 160,000 a year by 1969.

There were two main reasons behind this basic choice. First, the total resources available made it impossible to expand adequately all levels of education, and priority necessarily implies favouring something at the expense of something else. Second, there was the problem of teacher supply, linked directly with the bottleneck at the secondary level; in view of the urgent claims of other sectors of the economy, it would not have been possible to allocate the required proportion of the secondary school output to teacher training. Neither could the problem of staffing the teacher-training institutions be solved satisfactorily. Thus the enrolment ratios will be maintained by and large at the level of 1964 which were as follows: In standards I-IV, there were 519,000 pupils corresponding to an enrolment ratio of 49 per cent; and in standards V-VIII, there were 128,000 pupils to an enrolment ratio of 14 per cent, or a total of 647,000 pupils corresponding to an enrolment ratio of 32 per cent.

It should be noted that the above figures are very approximate, as the last population census took place in 1957. Since then only estimates have been available, and the varying assumptions with regard to the growth of population and changes in the age structure have been responsible for the differences in the various estimates of the enrolment ratios.

The decision to restrict the growth of primary education was politically a very difficult one to take, since it meant that half of each new school-age group would join the ranks of illiterates, who already represent 85 per cent of the male and 96 per cent of the female population aged 15 and over. But if the decision was a difficult one to take, its implementation proved even more difficult. During the past few years, the population has built scores of new schools under various self-help schemes, despite repeated warnings from the authorities that such schools could receive neither funds nor teachers. However, such is the insatiable thirst for education that rural communities have operated these schools on their own in the hope that one day they will be recognized by the Ministry of Education and taken over by local authorities. The creation of such schools raises complicated problems for the educational authorities; schools that conform to official standards are eventually included in the plan within the limits of projected expansion; others continue without official recognition.

The Ministry of Education is under even greater pressure with regard to upper primary schools. Under the three-year educational plan, marked progress was made at this level and total enrolments in standards V and VI more than doubled during this period. The draft for the 1964-69 plan envisaged a continuation of this trend and an increase of 10 per cent a year in enrolments in upper primary classes, thus bringing the enrolment ratio up to 28 per cent. At the same time, enrolments in lower primary classes were to increase only at a rate of 1.5 per cent a year, so that the enrolment ratio would remain at about 50 per cent. But during the revision of the financial estimates, the upper primary school programme was cut by £2.5 million, bringing the annual rate of increase down to 4-6 per cent and the enrolment ratio to 23 per cent.[1] None the less, the total number of pupils completing primary education is expected to rise from 20,000 in 1964 to 50,000± in 1969.

This policy of restricting the expansion of primary education will certainly be changed when the country is able to allocate more resources to education, but for the time being, it is considered by the planning authorities of Tanzania as the only sensible approach to the utilization of available resources. The main emphasis in the development of primary education under the plan is laid on improving its quality and consolidating the results already achieved. The measures envisaged to this end include the elimination of the double-shift system and of half-day attendance in lower primary classes (where the same teacher is used twice a day), the conversion from an eight-year to a seven-year system without reducing the content of the primary course, the gradual replacement of teachers with low qualifications by teachers with better qualifications, particularly at the beginning and the end of study, and, lastly, the establishment of a new cadre of primary school inspectors. These measures are expected to raise the standards of primary education, and thus to lay the foundations for the improvement of education in general in accordance with the manpower needs of the country.

The supply of teachers

Since the supply of qualified teachers is the crucial factor in any educational expansion, the plan attaches great importance to teacher training, the underlying assumption being that major changes are necessary in this field if the quality of the educational output is to be improved and wastage reduced. The present situation with regard to teacher supply is summed up in Table 15.

To meet the requirements for teachers during the plan period, a major reorganization of teacher training has been envisaged. The number of colleges is to be reduced from twenty-one to eleven in order to set up larger units of 240 to 480 pupils with corresponding economies of scale. The colleges will also be able to offer a wider range of courses and better specialization without proportionately increased costs.

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[1] A.C. Mwingira; Simon Pratt, *The Process of Educational Planning in Tanzania*, in Vol. I of this series, Paris, Unesco/IIEP, 1969.

TABLE 15. Teachers serving in public schools, 1964

Primary schools[1]		12 044
Grade A teachers	695	
Grade B teachers	1 379	
Grade C teachers	9 970	
Secondary schools		919
Technical schools and Dar es Salaam Technical College		152
Teachers' colleges		203
Total		13 318

NOTE
1. Entry qualification for training grade C teachers is standard VIII, grade B teachers, form 2, grade A teachers, form 4 ; the duration of the course for all three categories is two years

SOURCE
A.C. Mwingira ; S. Pratt, op. cit.

Owing to the larger output of secondary schools, most of the pupils will be trained as grade A teachers ; the intake for these courses will increase from 320 in 1964 to 1,500 in 1969, while that for grade C courses will decrease from 860 in 1964 to nil in 1968. The newly trained grade A teachers will be used mostly in upper primary classes, which suffer at present from lack of qualified personnel. Grade B courses will be entirely eliminated—in fact, there has been no intake into these courses since 1963—and the grade will become purely a promotion category.

Upgrading is also to be expanded considerably. In 1964, only 139 teachers benefited from upgrading courses in teacher-training colleges, while the total number of grade C teachers was almost 10,000. In order to facilitate retraining, the one-year full-time course in colleges has been replaced by a two-year correspondence course plus two intensive short summer courses. Various other short-term schemes are planned for those who do not benefit from regular upgrading.

A significant innovation is the setting up of facilities for graduate teacher courses. Their importance can be judged from the fact that, in 1963, there were only twenty graduate African teachers out of a total of 850 secondary teachers; in this field, the dependence on expatriate personnel is particularly heavy. Under the plan, two new forms of graduate teacher training have been started: one is the Dar es Salaam Teacher-training College, which should have an enrolment of seventy in 1969 and which provides a two-year course for secondary school leavers (form 6) to train as secondary school teachers or grade III education officers; the other is the new graduate course in education at the University College, Dar es Salaam, with an enrolment of 121 in 1965, a figure greatly exceeding the plan target, which provides a three-year course leading to a B.A. or B.Sc. degree in education. However, these measures will not be sufficient to provide the 1,200 additional secondary school teachers needed, and a further recruitment of expatriate personnel will no doubt prove necessary if the secondary school programme is to be fulfilled.

Another new development is the opening of the Institute of Education, whose task is to provide a link between teachers' colleges, the Faculty of Education and the Ministry of Education by helping to co-ordinate teacher training and upgrading at all levels, and also to revise curricula and syllabi.

The place of technical and vocational education

This type of education was among the weakest links of the educational system in the past. Both technicians and craftsmen skilled in modern crafts require secondary education as a base plus a good deal of working experience, a fair measure of mathematics and science in the case of technicians, and a good understanding of machinery, electricity and metals in the case of craftsmen. Because of the high cost of producing technicians, and the unwillingness or inability of School Certificate holders to undergo technical training, nearly all technicians' posts were filled by expatriates; only 'fundis'—semi-literate craftsmen trained non-formally—were produced locally. In the absence of firms which would undertake such training, a few educational facilities were set up for this purpose, but their output was small, qualitatively poor and only loosely connected with market demand. Most of the pupils qualifying for technicians' jobs took commercial or office subjects. In 1964, there was the Dar es Salaam Technical College which gave secondary education with a technical bias as well as courses for engineering technicians, technical teachers and for commercial and office occupations in evening classes; there were also two technical schools at Moshi and Ifunda providing craft training, three agricultural colleges, at Morogoro (diploma level for Field Officer), Tengeru and Ukuriguru (certificate level for Assistant Field Officer), and a number of small craft centres run by voluntary agencies.

As a result of the Tobias and Thomas surveys, technical and vocational education underwent a considerable change with a view to orientating the curricula towards the country's manpower needs. The emphasis was shifted from traditional to modern crafts, evening classes were opened for commercial and technical subjects, Ifunda was converted into a secondary school with technical bias, and Moshi, which is scheduled to undergo a similar conversion, will also give in-service training in evening classes. Agricultural subjects are about to be introduced in five secondary schools, the length of training at agricultural colleges may be reduced from three to two years, and it is also proposed to open twenty-six training centres for farmers before 1969. The decision has also been taken to provide grant-in-aid to the Commercial Institute at Shinyanga, where entry is at the School Certificate level. Enrolments at the Technical College at Dar es Salaam have risen to 580 full-time students in 1965, with one-third following courses in civil, electrical and mechanical engineering, and to 1,670 part-time students in commercial subjects and arts. The setting up of another technical college is envisaged during the plan period.

Despite these improvements, the Manpower Unit of the Planning Office fears an acute shortage of skilled manual workers when the major industrial projects scheduled in the plan come into operation. The Ministry of Education believes that this calls for additional resources to be allocated to formal technical and vocational education, whereas manpower experts are of the opinion that the imminent shortages can only be met through a broad system of training on the job. The planning authorities hold that the primary responsibility for industrial training should fall on industry, and that formal training in this field should only play a supplementary role, but the Ministry of Education argues that employers are apparently either unable or unwilling to provide it. As in many other countries, pending conclusive evidence one way or the other, the argument still continues, and both methods of acquiring technical skills are likely to be improved.

The place of higher education

The link between education and employment is at its closest at the university level. Higher education is, therefore, the educational sector most affected by manpower requirements. The decision to bring university output into harmony with manpower needs involved three different lines of action: projecting entries into specific courses of study in accordance with established high-level manpower requirements; making the flow of students follow the planned pattern of studies; ensuring that graduates take jobs for which they have been trained.

The plan projected the following number of Tanzanians for entry to the University of East Africa: 178 in 1964, 312 in 1965, 408 in 1966, 480 in 1967, 504 in 1968 and 528 in 1969. However, numbers alone do not provide a solution to the problem. Past evidence has shown that students fail to choose courses leading to occupations which are in critically short supply. In 1963, for instance, the great majority were enrolled in liberal arts, while the number of professional posts vacant amounted to 40 per cent at the Ministry of Agriculture, 22 per cent at the Ministry of Health, and 47 per cent at the Ministry of Communications, Power and Works. That same year produced only six Tanzanian graduate secondary teachers as against some 600 who were needed.

In order to remedy this situation and channel the students into the required courses, the government has used a variety of policy instruments, such as vocational counselling, tied bursaries, and control of overseas scholarships.

The tied bursary scheme was evolved jointly by the Ministry of Education and the Directorate of Development and Planning and put into operation for the 1964/65 entry. As its name implies, the tied bursary scheme binds the recipient to serve, after graduation, five years in whatever job he is directed to by the government. No compulsion is involved and applicants are free to accept or reject these conditions. The wishes of the recipients are taken into account in making the assignments. Students were thus directed into courses which have the highest priority, i.e., engineering, agricultural (including veterinary) science, medicine, and teaching, the places being allocated proportionately to the demand for each of the corresponding occupations, i.e., 24 per cent each for engineers, physicians and graduate secondary science teachers, and 28 per cent for agricultural scientists. For the arts, 50 per cent of the students were to follow teacher courses. The philosophy of this scheme was clearly stated by President Nyerere:

> 'Those who receive this privilege, therefore, have a duty to repay the sacrifice which others have made. They are like the man who has been given all the food available in a starving village in order that he might have strength to bring supplies back from a distant place. If he takes this food and does not bring help to his brothers, he is a traitor. Similarly, if any of the young men and women who are given an education by the people of this Republic adopt attitudes of superiority, or fail to use their knowledge to help the development of this country, then they are betraying our Union.'

Parallel to this scheme, which has already significantly changed the pattern of the university intake, a system of vocational guidance has been introduced. A guidebook for secondary school leavers, *Careers for Nation Building*, prepared by the staff of the Manpower Planning Unit, was published by the Directorate of Development and Planning in 1964. It informs potential students of current and prospective shortages in high-level occupations, describes the job, field of work, required training and qualifications, expected remuneration and the like. The guidebook is a loose-leaf book so that the information can be kept up-to-date. It is intended to facilitate career selection with the help and advice of the career master and other teachers and it has already had a noticeable impact. The choice of careers by students in 1965 was rather closely linked with the number and kind of bursaries offered by the government, and more than 85 per cent of those who received bursaries as teachers of both science and arts indicated teaching as one of their first two choices.

Control over the distribution of overseas scholarships is of great importance when one remembers that overseas study has been the largest source of supply of high-level manpower: in the middle sixties, there were more than three times as many Tanzanian students enrolled overseas than there were in East Africa. A Civil Service Advisory Group to the Government Committee on Education was set up to co-ordinate offers of scholarships from foreign countries and allocate them in accordance with manpower needs. It is the declared policy of the government that overseas scholarships should be awarded only in those fields in which there is no opportunity for study in East Africa. All scholarships, whether awarded by governments, private organizations or voluntary agencies, have to be submitted to the Civil Service Advisory Group and are accepted only if they fit into the general plan of training high-level skills. A comprehensive roster of Tanzanian students abroad, with indication of their status, course of study, country, and prospective data of return, is kept at the Ministry of Education to facilitate the placement of graduates in accordance with manpower needs.

It is too early to form a conclusion on the efficacy of these measures. There have been some exceptions to the rules laid down by them but, on the whole, these combined measures of directing inflows and outflows of university students have been found effective in Tanzania, when vigorously applied.

2 Manpower requirements and non-formal education

If the formal educational system must be considered as the key-stone of manpower supply, particularly in countries where the educational level of the population is low, it has one characteristic which makes it relatively inelastic—the long gestation period inherent in its very nature. Most of the educational output of the next half-dozen years is determined by the number of pupils and students already enrolled, and the full impact of policy measures taken now will be felt only after the end of the five-year period. As the implementation of a plan cannot be postponed until the educational system has produced all the necessary skills, other arrangements must be made to meet the current manpower shortages. Apart from a better utilization of the available manpower stock and imports of skills from abroad, there is only one way of increasing the stock of skills—upgrading by means of various forms of non-formal training. Such means are rather more extensively used in Tanzania than in other African countries.

The public sector

In the public sector, there are the various upgrading schemes run by the following ministries or government agencies: the Vice-President's Office (Civil Service Training College), the Ministry of Agriculture, Forests and Wild Life, the Ministry of Community Development and National Culture, the Ministry of Commerce and Co-operatives (Business Training Centre), the Ministry of Communications and Works, the Ministry of Health, the Ministry of Home Affairs (Police Training

Centre), the Ministry of Labour, and the Ministry of Education, which runs various training schemes ranging from a few days to a few weeks and a two-year upgrading course by correspondence for teachers.

The number of civil servants trained in these centres varies from several dozen to several hundred. The Civil Service Training Centre, for instance, trained 600 officers in 1962, 735 in 1963 and 1,076 in 1964. The Ministry of Community Development and National Culture turned out, at the centres in Tengeru and Rungemba, 336 community development workers in 1964. The Ministry of Health Training Institute produced 232 nurses, midwives, medical assistants and rural medical aids in 1964. The Ministry of Communications and Works trained 195 workers, the Ministry of Agriculture 167, and so on.

It should be noted here that educational planning in Tanzania is, in practice, concerned only with formal education and does not extend to the various upgrading schemes except that for upgrading teachers. These schemes are planned on a very short-term basis—annually as a rule—and they concern relatively small groups with very specialized syllabi. There is, however, a fair degree of co-ordination of training in the Civil Service and a clear division of labour between the various government agencies. The Civil Service Training Centre, for instance, trains officers of all the ministries for non-professional, accounting and establishment jobs, while the training centres of the ministries produce primarily specific skills needed by each of them. All of them perform an important service in meeting manpower needs, but the main shortcoming of this type of training is its relatively high unit cost due to the large number of courses and the small number of those attending each of them.

There is also specialized training given by education institutions, such as the Institute of Public Administration and the Institute of Adult Education of the Dar es Salaam University College, in the form of evening classes. These institutions offer a wide range of courses, and the two listed above have each an enrolment of over 1,000. Among the subjects taught are Swahili, English, and other foreign languages, economics, industrial relations, commercial disciplines, London City and Guilds courses, and academic courses for the General Certificate of Education (GCE). The role of these institutions in meeting manpower needs could be much greater if their programmes were more closely related to formal education curricula and led to recognized certificates or diplomas rather than imparting knowledge of a general kind, though enlightenment of the uneducated is also an important social objective.

Lastly, there is industrial training (TWI courses) provided by the Ministry of Labour for both the public and private sectors; several hundred foremen and other supervisory personnel benefit annually from these courses.

The private sector

Apprenticeship training in Tanzania is on a very small scale; in 1964, only thirteen indentures were contracted. Private employers, with the notable exception of Williamsons Diamonds Inc. and a few others, are reluctant to run training courses on a large scale, mainly for two reasons: the first is the high cost of training which many firms cannot afford, especially as, in view of the high turnover of skilled manpower, they risk losing workers whom they have trained; the second reason is historical—the training of skilled workers in the past was the responsibility of the colonial administration. While in the developed countries apprenticeship training in industry is the main method of producing skilled manual workers, in Tanzania and other African countries it only plays a marginal role.

However, as a result of the manpower planning work, the Ministry of Labour, in co-operation with the National Standing Manpower Advisory Committee, elaborated in 1965 a comprehensive industrial training scheme. The main responsibility for training manual workers would fall on the employers, who would produce skills in excess of their own requirements. The main difficulty is naturally the financial one. At first, it was proposed to finance the scheme by means of a one per cent pay-roll tax, the proceeds from which would be given to the firms whose training schemes had the approval of the Ministry of Labour. But this proposal was abandoned for fear that it might jeopardize the development of new industries. The question of how to associate the employers with financing the scheme has not yet been settled. It is also intended to introduce a trade-testing scheme similar to that existing in Kenya and Uganda which makes it possible to assess the skill, knowledge and performance of workers with a view to fixing their wages accordingly.

3 Supply and demand prospects

It may now be asked to what extent all these measures undertaken or envisaged in the field of formal and non-formal education will succeed in meeting manpower requirements. This has been calculated in the Thomas survey on the assumption that the targets of the plan will be fulfilled by 1969.

The crucial role in the fulfilment of the manpower programme will be that of secondary education. Part of the projected output of 25,000 form 4 leavers will fill the educational pipeline in accordance with the plan, the remainder will be available for direct employment. But first claim on this supply will be given to the educational pipeline for producing manpower in categories A and B, as is

TABLE 16. Secondary school output required for further education and training in 1964-69

Training programme	Number
Grade A teacher training	4 860
University needs (form 5)	4 820
Engineering technician diploma courses	700
Agriculture (field officer level)	285
Agriculture (assistant field officer level)	830
Nurses training (beginning in 1967)	180
Ministry of Health Medical School and Health Inspector pre-service training	120
Total (rounded)	12 000

SOURCE
Tanzania. *Survey of the high-level manpower requirements...*, p. 12. (See our bibliography.)

shown in Table 16. This will leave 13,000 school leavers available for employment in category C jobs. But the anticipated requirements for the latter are 17,300, of which 13,300 are in skilled office occupations and 4,000 in modern crafts. If the 13,000 form 4 leavers are distributed on a *pro rata* basis between these two branches, we have 9,900 available for skilled office occupations and 3,100 for modern crafts, i.e., a deficit of 3,400 for the former and of 900 for the latter.

However, according to the Thomas survey, this shortfall is not likely to present any serious problems; it is even believed that the output will exceed the effective demand during the five-year period. The fact is that the shortage of secondary school leavers in the past forced employers, including the government, to accept for category C jobs people with substantially lower qualifications; they also received correspondingly lower salaries. And it will take some time before employers are prepared to offer higher salaries capable of attracting form 4 leavers

TABLE 17. Supply/demand outlook for category B occupations, 1964-69

Group of occupations	Total requirements	Estimated supply	Shortfall or surplus
Medical personnel (nurses, physiotherapists, X-ray operators, etc.)	1 336	1 195	−141
Teachers (grade A)	2 710	2 650	− 60
Technicians (engineering, research and industrial laboratory, draftsmen, etc.)	1 000	557	−443
Agricultural technicians (field officer, assistant field officer)	1 240	999	−241
Accountants (non-certified)	269	...[1]	−269
Total	6 555	5 401	−1 154

NOTE
[1] Data not available. Supply mainly generated by on-the-job training, a combination of promotion and short courses or personal study

SOURCE
Tanzania. *Survey of the high-level manpower requirements...*, op. cit., p. 16.

into category C jobs; for the time being, they may prefer lower pay with lower qualifications. The problem may become more serious in the future, when the country will need more highly skilled workers, foremen, etc.

As far as category B is concerned, the supply/demand situation is shown in Table 17. As can be seen, the deficit of 1,154 is due mainly to the groups of technicians, both engineering and agricultural, and of medical personnel. The Thomas survey is rather optimistic about the possibility of eliminating most of the deficit through corresponding adjustments in the various training schemes run by the ministries. It is believed that, once assured of the necessary secondary school output, the training institutions will expand in line with requirements.

For category A occupations, the estimates of the Thomas survey are somewhat lower than those of the plan—2,905, as against 3,200. The situation is summed up in Table 18. The largest deficit is anticipated in occupations requiring science and mathematics, while those open to arts graduates will apparently be in balance. As a result of measures taken, substantial progress has been made towards achieving the manpower targets. At least 350 graduate teachers and 273 engineers will be produced during the plan period, and the over-all deficit, which amounted to 1,500 at the time the plan was being prepared, is expected to be no more than 941.

TABLE 18. Supply/demand outlook for category A occupations, 1964-69

Group	Five-year demand	Estimated supply	Shortfall
Occupations based on science/mathematics (engineers, scientists, doctors, etc.)	1 437	843	−594
Other occupations requiring special training (graduate teachers, social workers, lawyers, etc.)	943	599	−344
Occupations open to entrants with non-specialized degrees (administration, government, business executives, etc.)	525	522	(1)
Total	2 905	1 964	−941

SOURCE
Tanzania. *Survey of the high-level manpower requirements...*, op cit.

NOTE
1. Approximately in balance

4 Manpower planning and the policy of Africanization

One of the major objectives of development planning in Tanzania is self-sufficiency in trained manpower, except for some rare and highly specialized occupations, by 1980. This concerns first and foremost the Civil Service. For a country in which, at the time of independence, practically all the administrative, professional and technical posts were filled by expatriates, this is a very ambitious goal indeed, and it could only have been set on the basis of a careful assessment of manpower resources and requirements.

In carrying out the Africanization or, as it is now called, localization programme, it was necessary, on the one hand, to ensure that all the top policy-making jobs—chief executive, cabinet ministers, permanent secretaries—were in the hands of Tanzanians, and, on the other hand, to retain expatriate skills and to replace them gradually as and when competent Tanzanians became available. It was clear that in certain branches, notably the professions, the country would have to depend largely on expatriates for several years to come, though a steady decline was expected in the number of expatriates thus employed. In February 1962, the Africanization Commission was set up to elaborate a plan for complete 'localization' of every level of the Civil Service, to investigate the adequacy of in-service training schemes, and to report to the Cabinet periodically on the progress achieved. This progress can be seen from Table 19. It was quite rapid until June 1964, but since then there has been a slight increase in the number of expatriates. This evolution is, in fact, in line with the conclusions of the manpower survey for 1964/65-1968/69, which anticipated an increase in the total number of expatriates if the objectives of the development plan were to be achieved. For the plan called for high-level skills which the country simply did not possess. The projected net number of expatriates to be recruited during the plan period for top government

TABLE 19. Progress in localization since independence

	Officers serving in senior- and middle-grade posts on permanent terms			
	Citizens	Others	Total	Percentage of citizens
December 1961	1 170	3 282	4 452	26.1
December 1962	1 821	2 902	4 723	38.5
December 1963	2 469	2 580	5 049	48.9
June 1964	2 752	2 239	4 991	55.1
September 1964	2 880	2 235	5 115	56.3
December 1964	3 083	2 306	5 389	57.2

SOURCE Establishment circular letter No. 3, 1965 posts alone is just under 450, and this figure does not include teachers (1,200 taking into account replacements) and some specialized categories of manpower.

Despite the understandable aspirations to have the Civil Service staffed entirely by nationals, the government accepted the manpower implications of the plan and displayed a truly statesmanlike approach to what is probably the most burning issue in African countries after independence. This temporary increase in the number of foreign specialists is believed to be the only means of bringing about self-sufficiency in manpower within the shortest, historically speaking, period of two decades.

5 The institutional framework for integrating educational and economic planning

The integration of educational and economic planning calls for appropriate machinery. Preparing manpower programmes acceptable to ministries and government departments, balancing them against the probable capacity of the educational system, controlling the manpower aspects of educational and training programmes, all this requires not only a reasonably tested methodology, but a considerable degree of administrative authority which other government services are prepared to acknowledge. If this last condition is not met, the conflicting interests of individual ministeries may easily lead to deadlocks in relating manpower targets to the planned levels of government activities at the lower administrative levels; and it may take months before working compromises can be reached between the different parts of the bureaucratic machine.

It may seem, at first glance, that the best way of ensuring the integration of educational and economic planning would be to place manpower planning within the Ministry of Education, which has the primary responsibility for producing high-level skills, or within the Ministry of Labour, which has the responsibility for the utilization of human resources. However, on further reflection it would be seen that neither of these solutions would be wholly satisfactory. Manpower planning concerns all spheres of activity, both public and private, and cannot be carried out by a service ministry without losing universality and impartiality. Moreover, manpower planning is an integral part of over-all planning, and should, therefore, be part and parcel of the planning machinery wherever the latter might be located. Where, then, is the best place for such machinery?

In centrally planned economies the answer is obvious: economic planning being all-embracing, the planning authority is placed directly under the Council of

Ministers. In mixed economies, which are the feature of the great majority of developing countries, the answer is not so simple; it would seem, however, that there, too, a lot is to be gained by placing the planning authorities under the direct responsibility of the chief executive, i.e., the Prime Minister or the President. And the experience of Tanzania seems to support this view.

When planning began early in 1963, it came under the responsibility of the Ministry of Development Planning, which had the same status as any other government department. This prevented the planning office from having the final word in conflicts of interests with other ministries; any attempt on the part of the Ministry of Development Planning to influence the programmes of other ministries met with opposition. It became clear that, if it was to perform co-ordinative functions properly, the planning authority had to be placed above the departments whose activities it was called upon to co-ordinate. Failing this, it would have to report each case of disagreement to the Cabinet, which would then have to take a decision. Such procedure is no doubt conceivable, but it is slow. When Tanzania had to start on its five-year plan, it was thought that the former solution would be more appropriate. Consequently, the Ministry of Development Planning was transformed into the Directorate of Development and Planning and attached directly to the Office of the President. This structure was maintained throughout the whole period of the formulation of the plan and during the first year of its implementation. In October 1965 the Directorate was again transformed into a ministry, in connexion with broader administrative changes in the structure of government.

The Manpower Planning Unit had some difficulties in performing its tasks, first, because it was greatly understaffed; second, because co-operation with the two principal ministries concerned—education and labour—was not always easy. In the beginning stages of planning, high officials in the Ministry of Education and the Directorate of Planning held conflicting views on the nature of the relationship between education as a social service and employment opportunities in the economy. Changes in personnel and experience in working together made for more flexibility and better understanding even in areas where there used to be striking differences of opinion, such as the development of primary education, unit costs in boarding schools, double-shifts in secondary schools, and technical and vocational education, and where the final decision had to be taken at the highest level, a fair measure of agreement seems now to have been reached. Co-operation has been developing smoothly thanks to an appropriate institutional framework.

In 1963, a Standing Manpower Advisory Committee was set up. It includes senior officials of the ministries having major responsibilities for manpower: planning, education, labour, commerce and co-operatives, community development and national culture, and the Central Establishment Division of the Vice-

President's Office. Representatives of trade unions, co-operatives and employers' associations are invited to attend meetings whenever questions relevant to their activities are discussed. This committee has dealt with a wide range of subjects, such as the Africanization of the private sector, the rate of development of primary education, the tied bursary scheme, and apprenticeship programmes, and has become a very useful instrument for clarifying issues, bringing together diverging points of view and working out compromises at the level of permanent secretaries and representatives of trade unions and employers.

It now remains to examine how far the economy will be able to absorb usefully the manpower thus generated by education and training.

6 The absorptive capacity of the economy

In developing countries, there is a serious disparity between the ability to create new jobs and the ability to produce skills. The magnitude of this problem in Tanzania is shown in Table 20.

As can be seen, only one in ten new entrants to the labour market has any hope of securing paid employment; the remaining nine have no alternative but to subsist by self-employment, more particularly, to live on the land and produce food for subsistence and cash crops for sale. This is a serious situation for society as a whole, and even more so for those who have benefited from education and acquired aspirations for a better way of life which may never be realized. Frustration and failure are bad foundations on which to build a nation. And the non-utilization of people in whom a considerable amount of scarce resources was invested constitutes, from the economic point of view, pure waste.

TABLE 20. Employment prospects and new entrants to the labour market, 1964/65-1968/69

New jobs (cumulative for five-year period)		
Wage agricultural employment	44 000	
Non-agricultural employment	66 000	
Total		110 000
Estimated standard VII/VIII leavers		231 520
Estimated all new entrants to the labour market		1 150 000

SOURCE
Estimates of the Directorate of Development and Planning, 1965

There is sometimes a tendency to blame education for this state of affairs. This is an oversimplification, for education is only partly responsible; its main role has been to highlight the issue of growing unemployment in an underdeveloped economy. With or without education, there will be unemployment, or at least underemployment, in Tanzania for years to come, and the fact that an important share of public resources was spent on these people only makes it more imperative to put them to productive use. It should be stressed that, in this respect, there is a great difference between primary school leavers and the products of secondary and higher education. There is such lack of high-level skills in Tanzania that the main problem for the next decade is not how to use them, but how to produce them; the problem of unemployment of the highly educated observed in India and some other developing countries will not arise in Tanzania for some time to come. But the situation is very different with regard to primary school leavers. This problem has been studied by a number of experts,[1] who have put forward suggestions for its solution. The Government of Tanzania is fully aware of this problem, and the decision to restrict for the time being the expansion of primary education was partly motivated by it. The relatively high priority given to agricultural development in the plan is also a way of tackling this problem. But there is no consensus of opinion on what further practical steps should be taken for solving the problem.

In the coming years, the primary schools will turn out annually 45,000 to 55,000 school leavers, i.e., about 20 per cent of the corresponding age group. Only 2.7 per cent of the age group will go into secondary school by 1969; the remainder will have to look for employment. But whereas, in the past, a primary school certificate was enough to secure a junior white-collar job or to qualify for entry into grade C teacher training, this is no longer the case. Besides, there is a limit to government employment, on which primary school leavers can no longer count. A small proportion can expect to find employment in the non-agricultural private sector. The remainder must either return home and resume farming, or swell the ranks of the town unemployed. The evidence shows that the majority are inclined to take the latter course rather than the former, and this for three main reasons.

The first, and paramount, reason is an economic one. Education was seen not only as satisfying a thirst for knowledge, but also as leading to a higher standard of living, especially when the initial salary of a university graduate in government service (with dependants) was £760 a year and the average income per head of population £20, that is thirty-eight times lower. When, after independence, a small number of educated Africans moved into positions formerly held by expatriate colonial administrators and inherited, along with their responsibilities, the high salaries and amenities that went with the jobs, the population was tempted to link this affluence with education. It may be noted, in this connexion, that the salary structure in the Civil Service which had been based after independence on the United Kingdom pattern has been undergoing a series of changes with a view to reducing the wide gap in incomes between a small section of the population and the great mass of the people. Nevertheless, the primary school leavers who stay unemployed in the cities, relying on various forms of assistance from their relatives or co-villagers, harbour the hope of being able one day to continue their education and to climb up the social ladder.

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[1] Notably Archibald Callaway, Guy Hunter and Adam Curle. (See our bibliography.)

The second reason is usually ascribed to wrong attitudes towards farming as an occupation acquired at school and shared sometimes by school teachers, some of whom come from the cities. While the hardships of rural life come certainly into it, apparently no distinction is made between traditional agriculture and modern farming; failure to succeed in the city means failure *tout court*.[1]

The third reason seems to be the orientation and content of primary education as it is given at present. It differs little from the old model, the main objective of which was to prepare the pupil for further education and an auxiliary job in the Civil Service; in other words, primary education does not equip the individual for the way of life he is most likely to lead and is of very limited value in the conditions of a predominantly rural economy. It may be added that senior Tanzanian officials are aware of this problem; the Conference of Regional Commissioners which met in October 1964 passed a resolution stating '...that there was something wrong in our education system. In the past, agriculture was not given its proper place in the school syllabus. As a result, many school leavers despised farming in favour of white-collar jobs. Although this mistake had been discovered for some time, yet not enough propaganda had been made to change the pupils' ideas. The Ministry of Education should, therefore, be asked to stress the importance of agriculture and farming in schools.'

The argument about the content of primary courses in rural areas has been going on for many years. The two extreme views are, on the one hand, that the purpose of primary education, whether urban or rural, is to spread literacy in the broad sense of the word and to give the pupil some fundamental notions of a modern scientific outlook, and, on the other, that since nine-tenths of the pupils acquire knowledge which has no real relevance to their way of life after studies, the traditional primary education should be replaced by a sort of vocational course in agriculture (school farm) which would be directly productive.[2] There are, of course, various shades of opinion between these two extremes, including a suggestion to devise two different curricula, one for the academic stream, the other for the farming stream.

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[1] The question of attitude is discussed by V. L. Griffiths. (See our bibliography.)

[2] Cf. Thomas Balogh and René Dumont. (See our bibliography).

During the past few years there has been a growing consensus of expert opinion in favour of revising primary curricula and gearing it more closely to rural environment without, however, introducing vocational agriculture at primary level. This is regarded as one of the priority tasks of the Institute of Education recently established at the University College, Dar es Salaam. The general orientation for the revision of primary curriculum was first laid down by the Unesco/ECA-sponsored Addis Ababa Conference of African States which stated that 'while it should be general and not vocational in its intention, it should include elements which seek to develop an appreciation of the value of work with the hands as well as with the mind'.[1] A fair amount of agreement has been reached between Unesco, FAO, ILO and Unicef experts on this basic issue. A recent Unesco Study Group on Agricultural Education and Sciences re-emphasized that 'primary education cannot claim to prepare for a trade. If its length is no less than six years, then the maximum which can hopefully be attained is the introduction in the curricula of substantial insights into rural life'.[1] According to A.E.G. Markham, FAO educational adviser, 'there is an impressive volume of experience leading to the conclusion that the teaching of vocational agriculture in primary schools is of little or no value in producing future farmers or agricultural technicians. Vocational agriculture cannot usefully begin at too early an age—possibly not less than about 18 years of age'.[1] Lastly, the African Conference on Progress through Co-operation 'felt generally that the aim of the elementary school should be to provide a broad basic education and basic skills, and not to prepare children for specific forms of employment'.[1]

It is generally thought that a two-track system of primary education would drive the village and the city further apart, seriously weaken the basis of an integrated national system of education, quite apart from creating insurmountable difficulties in the selection of pupils for the two streams, and reduce still further the already slender possibilities of recruiting teachers from rural areas; in short, that it would create more problems then it could solve. It is further believed that the best way to equip the school leaver with the minimum skill and knowledge needed for agricultural work besides relating the primary school curriculum to rural environment, would be short-term vocational post-primary training schemes organized on a large scale.

Leaving aside the problem of financing and staffing such schemes—a problem which is far from being solved—it should be emphasized that all these measures are necessary but not sufficient to deal adequately with the problem of primary school leavers. The crux of the matter lies not so much in education as in the appropriate economic and social conditions in which the skills thus acquired can be productively applied. As it was emphasized by the Conference of African

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[1] See our bibliography.

States on the Development of Education in Africa, 'if primary education cannot be integrated into the economy, this is equally a challenge to revolutionize the economy'.[1] This is largely a question of land tenure, credit facilities, marketing etc.; without land, initial capital and a market for surplus produce, vocational post-primary training may be wasted just as much as primary education is wasted now.[2] The problem of economic opportunities in agriculture also depends heavily on the amount of resources devoted to agricultural development. The five-year plan gives a relatively high priority to agriculture (9 per cent of total expenditure) but, in absolute terms, £48 million for a rural population of close to 10 million is not very much. Yet it is hard to think of any significant re-allocation of resources that would not prejudice other major objectives of the plan. What can be conceived, however, is a shift of emphasis in the agricultural sector from the 'transformation approach' (new settlement, irrigation, use of machines), which is very costly, to the 'improvement approach' (modernization of traditional farming methods through extension work, community development and co-operative schemes), which is likely to increase output and employment opportunities more rapidly and at lower cost.[3] But to change significantly the employment situation and increase economic opportunities would require a much larger investment effort than Tanzania can afford in the next few years.

One of the main reasons why the employment problem in developing countries is so acute lies in the apparent contradiction between the aims and means of development, i.e., rapid modernization through the use of the most modern technology, on the one hand, and the current surplus of labour, on the other. For modern capital-intensive techniques are primarily designed to save labour. This apparent conflict could be partly resolved by the use of what has been called 'intermediate technology'. This is a kind of technology which gives a higher productivity than the traditional techniques and, at the same time, is cheap and simple enough to be used advantageously in developing countries. A figure of £70 to £100 of equipment cost per average work place was advanced as a minimum for such technology.[4] Relatively little is known about this technology; in particular, whether investment in it would pay, how it will affect the input/output ratio, what would be the competitiveness of the product etc. But such questions could only be answered by a practical application of such a tecnology. As to the theoretical aspect of its application, it should be borne in mind that, while enabling in the short run the employment of more human resources and raising significantly the efficiency of labour, the intermediate technology in the long run tends to widen the technological gap between developed and developing countries. This is, undoubtedly, one of the reasons why many developing countries continue to display a marked preference for the latest capital-intensive techniques which, it is hoped, will create conditions for maximizing employment in the long run.

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[1] See our bibliography.

[2] Cf. A. Callaway, op. cit., p. 9.

[3] In his IIEP study, G. Hunter formulates a series of practical suggestions in this connexion, his main idea being to make the high-value crops bear the cost of the proposed development of agricultural extension.

[4] Cf. E.F. Schumacher. (see our bibliography).

Another way of easing the problem of unemployment is the 'human investment' approach, i.e., public works on a large scale with an extensive use of labour and with little or no capital investment. This method was used in the early stages of development in a number of industrial countries, and it is now being used in several African countries, such as Guinea, Nigeria, Tunisia and Ghana. The self-help schemes under the Community Development Programme in Tanzania are a variety of this method. But the use of this method on a large scale requires an increased production of foodstuffs which alone would make it possible to transfer a substantial proportion of the agricultural population to non-agricultural activities.

Such problems can hardly be called educational, but then the whole issue of school leavers and of the capacity of the economy to absorb them is more economic and social than educational in character. It must be considered in the wider context of over-all development, whose ultimate success depends on the joint efforts of policy-makers, planners, and indeed the whole population.

Conclusion

Tanzania is one of the few African countries to have achieved a considerable measure of success in integrating educational planning with economic planning. This success was due largely to an early realization on the part of the authorities that, in the circumstances in which the country finds itself at present, educational development should serve primarily the economic and social needs of the country as defined by the development plan, and not simply pursue the ideal of having the greatest number possible receive schooling. With its limited resources, Tanzania could only have fulfilled such aspirations as, for instance, the maximum spread of primary education or elimination of illiteracy in a short time, by severely limiting the development of, and perhaps even cutting down, other levels and types of education which are more essential to the balanced economic and social development of the country. Hence the far-reaching decision of the authorities not to allow the indiscriminate expansion of education—the results of which are often ephemeral—and to confine, for the time being, the growth of primary education to a limited objective of maintaining the present enrolment ratio, so as to be able to give top priority to secondary education, which is seen as the keystone for building the structure of high-level manpower for development.

All the other features of the educational plan are a logical continuation and consequence of this decision. Secondary education, if it is to fulfil the role assigned to it, must not only be expanded, but also oriented more towards science subjects so as to provide a sufficient number of future university students in science and engineering; the primary school output must be considerably improved. The supply of trained teachers must be increased correspondingly in accordance with this orientation and the quality of the teaching staff improved, a task which is to be carried out by raising the entry qualifications to teacher-training colleges, regrouping the existing colleges and setting up facilities for training graduate teachers. Increasing the output of university graduates in conformity with manpower needs has meant the institution of vocational guidance, the creation of tied bursaries and control over scholarship for studies abroad. Bringing technical and vocational education closer to the needs of the economy has required such measures as the revision of the curricula, the introduction of agricultural and commercial subjects in a number of secondary schools, the expansion of vocational training in evening classes, and particularly the setting up of a variety of in-service training schemes.

All these measures, contemplated or put into effect, flow logically from the decision taken by the government to put education at the service of economic development and to achieve self-sufficiency in high-level manpower within fifteen or twenty years. This decision itself was based on a careful appraisal of the available human resources and systematic estimates of future manpower needs and the sources of meeting them. Herein lies an object-lesson which other developing countries might consider with more than passing interest.

C1

Appendixes

A Table 1. High-level manpower requirements 1964/65-1968/69
Category A occupations
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B Table 5. Supply estimates—university-level inputs and outputs—University of East Africa
C Table 6. Degree course outputs in addition to the University of East Africa
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SOURCE
Survey of the High-level Manpower Requirements and Resources for the Five-Year Development Plan 1964/65-1968/69. Directorate of Development and Planning, Dar es Salaam, 1965

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APPENDIX A

Table 1. High-level manpower requirements 1964/65-1968/69. Category A occupations[1]

ISCO code (1)	Occupation (2)	Total employment 1964/65 (3)	Employed Africans 1964/65 (4)	Employed Asians 1964/65 (5)	Employed Europeans 1964/65 (6)	Current vacancies (7)	Required replacements in five years (8)	Employment net increase 1968/69 (9)	Total requirements 1968/69 (10)	Estimated supply 1968/69 (11)	Short-falls or surplus (12)
0–01.20	Architect, buildings	18	3	8	7	13	3	3	19	20	+ 1
0–01.30	Town planner	5	1	0	4	3	1	12	16	0	− 16
0–01.40	Quantity surveyor	14	0	0	14	2	3	5	10	5	− 5
0–02.02	Civil engineer, general	156	8	17	131	44	38	46	128		
0–02.24	Electrical engineer, general	80	17	22	41	27	18	38	83	273	− 60[2]
0–02.38	Mechanical engineer, general	122	8	29	85	23	28	71	122		
0–02.34	Telecommunication engineer	12	1	0	11	1	2	7	10		10
0–02.60	Chemical engineer, general	4	0	0	4	0	1	4	5	8	+ 3
0–02.66	Metallurgist (extractive)	3	0	0	3	0	0	1	1	0	− 1
0–02.74	Mining engineer (general)	6	0	0	6	0	1	1	2	6	+ 4
0–02.84	Industrial efficiency engineer	1	0	0	1	1	0	0	1	0	− 1
0–03.10	Surveyor, general	50	12	8	30	19	9	19	47	15	− 32
0–11.10	Chemist, general	27	2	4	21	4	6	18	28	13	− 15
0–19.30	Geologist	31	3	0	28	4	10	3	17	17	0
0–21.10	Veterinarian, general	31	2	2	27	33	8	3	44	44	0
0–22.10	Biologist, general	3	0	0	3	2	1	1	4	0	− 4
0–22.30	Zoologist	15	1	0	14	3	4	5	12	8	− 4
0–22.90	Biologists and animal scientists N.E.C.	2	0	0	2	2	1	0	3	0	− 3
0–23.20	Agronomist, field and research	75	22	2	51	53	18	77	148	121	− 27
0–23.30	Horticulturist	0	0	0	0	1	0	1	2	0	− 2
0–23.40	Silviculturist	55	5	0	50	9	14	15	38	17	− 21
0–31.10	Physician, general practice	434	42	131	261	40	148	137	325	121[3] 45[4]	−159
0–31.50	Pathologist, medical	0	0	0	0	3	0	1	4	0	− 4
0–32.10	Dentist	16	0	7	9	3	3	19	25	4	− 21
0–51.10	Pharmacist	49	7	21	21	8	8	25	41	30	− 11
0–59.40	Dietician	2	0	0	2	0	1	0	1	0	− 1

0–61.20	University teacher (arts)	27	5	2	20	5	13	34	52	I.N.A.	− 52
0–61.30	University teacher (sciences)	4	0	0	4	1	4	12	27	I.N.A.	− 27 [5]
0–61.31	University teacher (other)	7	1	1	5	3	3	3	9	I.N.A.	− 9
0–69.40	Teacher, secondary school graduates	563	38	112	413	0	400	240	700	255[6] 94[7]	−351
0–69.41	Teacher, secondary school diplomates	44	22	3	19	0	25	90	115	200	+ 85[8]
0–69.90	Teacher, Dar-es-Salaam Tech. College	34	4	3	27	9	28	11	48	I.N.A.	48
0–81.10	Lawyer, general	181	41	95	45	22	40	20	82	82	0
0–92	Authors, journalists and related writers	46	26	2	18	3	9	35	47	44	− 3[9]
0–Y1.10	Accountant, professional	146	11	56	79	9	33	75	117	45	− 72
0–Y2.10	Social worker, general	12	12	0	0	2	3	7	12		12
0–Y3.10	Librarian	9	2	0	7	0	2	8	10		10
0–Y4.20	Economist	6	0	0	6	4	1	6	11	11[10]	0
0–Y4.40	Statistician	4	0	1	3	4	1	9	14	2	−12
0–Y9.41	Personnel specialist, industrial	69	53	8	8	2	16	23	41	3	− 38
0–Y9.56	Interpreter	8	0	2	6	4	2	0	6		6
0–Y9.90	Professional, technical and related workers, N.E.C.	1	0	0	1	0	0	0	0	1	+ 1
1–01.50	Administrator (government)	248	112	13	123	52	144	12[illegible]	322	322	0[11]
1–11	Directors, managers and working proprietors	181	42	49	90	7	37	112	156	156	0[12]
	TOTAL	2 801	503	598	1 700	435	1 147	1 323	2 905	1 962	−943

NOTES

1. The data in columns 3-10 in all categories of occupations in Table 1 represent 100 per cent for each item in Tanzania's economy. The figures are blown up from the data obtained from the surveyed establishments. For ease in presentation a number of related occupations (3 digit minor groups of the International Standard Classification of Occupations) have been listed as a group. For example 1-11 directors, managers and working proprietors, 7-53 mechanic repairmen *et al.* Details of every specific occupation in the group (e.g., mechanic repairmen, agricultural machinery; M. R. mining machinery, etc.) are contained in the tabulations made from the study and are on file in the Directorate of Development and Planning
2. All three branches of engineering call for HSC (science) and the first university year is common to all. A total of 273 is the maximum output foreseen and it will be allocated among the three specialities as equitably as possible in the light of their requirements
3. University
4. Ministry of Health
5. University College of Dar es Salaam only
6. Arts
7. Science
8. This surplus will be used to fill graduate posts thus making combined short-fall—266
9. Allocated from B. A. output
10. There are 98 estimated coming out with economic degrees. Relatively few individuals work in posts specifically labelled 'economist'. A great many in the higher posts in government particularly deal in 'economics' subject matter and persons so trained are highly useful in such posts. Because of this, the 87 other persons coming out with economics training have been applied as supply against 'Administrators, government, 1-01.50'
11. Column 11 contains all B. A. output not included in any occupations above plus 87 economics degrees
12. The total requirement for directors, managers, and working proprietors is estimated at 625. Of this total, it is estimated about 25 per cent of the posts will call for a university degree and thus have been included in category A. The remaining 468 are in category C

C7

Table 2. High-level manpower requirements 1964/65-1968/69. Category B occupations

ISCO code (1)	Occupation (2)	Total employment 1964/65 (3)	Employed Africans 1964/65 (4)	Employed Asians 1964/65 (5)	Employed Europeans 1964/65 (6)	Current vacancies (7)	Required replacements in five years (8)	Employment net increase 1968/69 (9)	Total requirements 1968/69 (10)	Estimated supply 1968/69 (11)	Shortfalls or surplus (12)
0–41.10	Nurse, professional (senior, supervisory)	187	91	9	87	70	106	69	245	245	0
0–41.11	Nurse, staff and general duty	670	668	2	0	70	500	300	870	870	0[1]
0–53.20	Physiotherapist	3	0	0	3	1	2	2	5	0	15
0–53.40	X-Ray operator, medical	9	7	1	1	4	2	16	22	0	−22
0–53.90	Medical technicians, other	113	69	33	11	72	29	93	194	80	−114
0–69.30	Teacher, primary school	1 719	1 651	63	5	0	1 255	1 455	2 750	2 650	−60
0–93.65	Radio announcer	44	41	0	3	0	9	15	24	I.N.A.	−24
0–X1.10	Draughtsman, general	59	32	22	5	11	15	37	63	45	−18
0–X9.20	Technician (engineering)	859	376	146	337	133	200	402	735	440	−295
0–X9.30	Technician (research lab.)	19	17	1	1	3	4	45	52	13	−39
0–X9.40	Technician (industrial lab.)	37	30	5	2	2	7	33	42	14	−28
0–X9.90	Science and engineering technical N.E.C. and lab. assistants	32	17	0	15	0	7	17	24	0	−24
0–X9.91	Agricultural technician (field officer)	206	69	3	134	84	52	204	340	244	−96[2]
0–X9.92	Agricultural technician (assistant field officer)	1 300	1 286	14	0	200	250	450	900	755	−145
0-Y1.10N	Accountant, non-certificated	395	52	165	178	34	108	127	269	I.N.A.	−269[3]
6–02	Engineer officers, ship	24	16	2	6	0	4	9	13	2	−11
6–21	Aircraft pilots, navigators and flight engineers	16	0	0	16	0	3	1	4	0	−4
6–72	Radio communication operators	86	45	2	39	18	15	10	43	43	0
	TOTAL	5 778	4 467	468	843	702	2 568	3 285	6 555	5 401	−1 154

NOTES

1. Strictly speaking, these staff and general duty nurses do not meet the definition for inclusion in this survey (i.e. secondary education or its equivalent). At present they enter training at completion of standards VIII and X. Beginning in 1967, it is planned that the entry of staff nurses will go up to form 4 and as the supply of secondary output increases, it is anticipated that all of these nurses, staff and general duty, will require a form 4 completion for entry. For full and proper performance, the job itself requires such an educational standard
2. Only grade A teachers are included (secondary plus two-year teacher training)
3. Supply mainly generated by on-the-job training and through progressive experience in increasingly difficult posts aided by short courses and self study

Table 3. High-level manpower requirements 1964/65-1968/69. Category C occupations. Skilled office workers and skilled manual workers in occupations requiring a secondary school education for adequate performance of the full array of tasks involved in the occupation

ISCO code (1)	Occupation (2)	Total employment 1964/65 (3)	Employed Africans 1964/65 (4)	Employed Asians 1964/65 (5)	Employed Europeans 1964/65 (6)	Current vacancies (7)	Required replacements in five years (8)	Employment net increase 1968/69 (9)	Total requirements 1968/69 (10)	Estimated supply 1968/69[1] (11)	Shortfalls or surplus (12)
1–01	Executive officer, government[2]	1 876	1 126	374	376	437	256	526	1 219		
1–11	Directors, managers and working proprietors[3]	544	127	145	272	21	113	335	469		
2–01	Book-keepers and cashiers	1 996	743	1 233	20	251	480	791	1 522		
2–11	Stenographers, secretaries	681	102	332	247	30	148	206	384		
2–11	Typists	1 101	837	210	54	354	233	674	1 261		
2–91	Office-machine operators	424	134	282	8	9	102	233	344		
2–99	Clerical workers N.E.C.	8 026	5 156	2 791	79	1 459	1 727	4 665	7 851		
6–81	Postal officers, post office clerks	420	318	101	1	0	89	143	232		
	SKILLED OFFICE TOTAL	15 068	8 543	5 468	1 057	2 561	3 148	7 573	13 282		
5–01	Miners and quarrymen	67	48	0	19	0	14	9	23	6	
5–21	Mineral treaters	11	0	3	8	0	2	1	3		
6–01	Deck officers and pilots, ship	33	17	3	13	0	6	10	16	8	
6–31	Drivers and firemen, R.R. eng.	117	51	66	0	12	27	40	79	34	
6–51	Conductors and brakemen R.R.	114	108	6	0	0	23	39	62		
6–61	Inspectors and supvrs. trans.	138	134	4	0	6	28	53	87		
6–62	Traf. contr. and disp. trans.	90	47	41	2	0	21	33	54	28	
6–71	Telephone and telegr. operators	247	234	12	1	5	50	86	141		
6–93	Insp. traffic control and disp. com.	88	53	35	0	14	19	30	63		
7–33	Rolling mill operator, metal	22	7	15	0	3	5	19	27		
7–41	Precision-instr. makers, watch and clock makers and repairmen	3	0	0	3	2	1	2	5		
7–50	Fitter-machinists, tool makers and machine-tool setters	310	251	50	9	23	66	125	214		
	Carry over	16 338	9 493	5 703	1 112	2 626	3 410	8 020	14 056	76	

[See notes p. 77]

Table 3 (cont.)

ISCO code (1)	Occupation (2)	Total employment 1964/65 (3)	Employed Africans 1964/65 (4)	Employed Asians 1964/65 (5)	Employed Europeans 1964/65 (6)	Current vacancies (7)	Required replacements in five years (8)	Employment net increase 1968/69 (9)	Total requirements 1968/69 (10)	Estimated supply 1968/69 (11)	Shortfalls or surplus (12)
	Brought forward	16 308	9 493	5 703	1 112	2 626	3 410	8 020	14 056	76	
7–51	Machine tool operators	51	30	21	0	4	13	24	41		
7–52	Fitter-assemb. and machine erectors (except elect. and precision-inst. fitter assemb.)	26	16	2	8	4	6	4	14		
7–53	Mech. repair except M.V.	1 365	803	406	156	42	298	511	851	47	
7–53	Mech. repair motor vehicle	1 237	842	317	78	82	223	483	788	204	
7–54	Sheet-metal workers	99	51	47	1	1	21	63	85	1	
7–55	Plumber, general	207	198	2	7	23	42	46	111	46	
7–55	Pipe fitter	161	160	1	0	4	33	62	99	53	
7–56	Welders, electrical and gas	162	161	1	0	5	31	95	131		
7–57	Metal plate and structural metal workers	219	196	5	18	7	44	123	174	7	
7–61	Electricians, electrical repair and related workers	450	311	117	22	16	98	205	319	76	
7–62	Elect. and electronic fitters	82	9	44	29	4	20	33	57	10	
7-64	Instal. and repair, tel. and telegr.	46	38	8	0	13	10	16	39		
7–65	Lineman and cable jointers	105	98	6	1	0	21	54	75	1	
7–99	Skilled constr. workers N.E.C.	139	14	103	22	16	33	81	130		
8–01	Compositors and typesetters	119	76	31	12	15	32	98	145	18	
8–02	Pressman (printing)	20	15	2	3	4	4	17	25	2	
8–03	Stereotypers and electrotypers	4	4	0	0	0	1	3	4		
8–05	Photo-engravers	17	13	2	2	0	4	10	14		
8–06	Book binders and related work	33	30	2	1	7	7	27	41		
8–21	Millers, grain and related prod.	33	22	5	6	1	7	27	35		
8–24	Brewers, wine makers, related workers	10	4	0	6	1	2	5	8		
8–32	Cookers, roasters and other meat treaters, chem. and related prod.	5	5	0	0	0	1	4	5		
9–71	Photographers, related camera operators	12	6	3	3	3	3	9	15		
	TOTAL SKILLED MANUAL CATEGORY C	5 842	4 052	1 360	430	317	1 216	2 447	3 980	541	
	GRAND TOTAL CATEGORY C	20 910	12 595	6 828	1 487	2 878	4 364	10 020	17 262		

NOTES TO TABLE 3

1. Only supply developed as a result of specific formal training courses designed to produce fully competent performers has been entered in column 11. This includes in addition to formal in-plant courses, apprenticeships plus the city and guilds courses of the Dar-es-Salaam Technical College. Ifunda and Moshi Trade School output *per se* was not included since persons are not trained to journeyman level in these schools and can only reach that level after completing 'on-the-job-training' in the same craft for several years in an employing establishment. Where such establishments maintain an apprenticeship or other formal in-plant training programme, and trade school boys have been a part of such a programme (leading to full journeyman qualification), they have been included in the figures entered in column 11
2. Adjusted for local government
3. The total need in this occupational group is 625. Twenty-five per cent or 156 has been allocated to category A

Table 4. Manpower requirements, 1964/65-1968/69. Category D occupations

ISCO code (1)	Occupation (2)	Total employment 1964/65 (3)	Employed Africans 1964/65 (4)	Employed Asians 1964/65 (5)	Employed Europeans 1964/65 (6)	Current vacancies (7)	Required replacements in five years (8)	Employment net increase 1968/69 (9)	Total requirements 1968/69 (10)	Estimated supply 1968/69 (11)	Shortfalls or surplus (12)
7–03	Weavers, loomfixers, loom preparers	150	147	2	1	3	30	123	156		
7–14	Upholsters and related work	17	16	0	1	1	3	5	9		
7–34	Blacksmiths, hammersmiths and forgemen	127	122	5	0	9	25	38	72		
7–35	Moulders and coremakers	56	56	0	0	4	11	19	34		
7–71	Carpenters and joiners	1 291	1 041	247	3	22	273	584	879	72	
7–72	Cabinet makers	116	104	12	0	7	29	34	70		
7–81	Painters and paperhangers, construction and maintenance	453	453	0	0	37	91	55	183	10	
7–91	Bricklayers, stonemasons, tile setters	1 563	1 482	63	18	25	326	766	1 117	80	
7–92	Plasterers	52	50	2	0	0	11	37	48		
8–71	Operators of stationary engines, related equipment and boiler firemen	44	36	8	0	0	9	13	22		
8–72	Crane and hoist operators	191	191	0	0	0	38	65	103		
	TOTAL	4 060	3 698	339	23	108	846	1 739	2 693	162	

Table 5 Supply estimates—university-level inputs and outputs—University of East Africa. Major science-based occupations and graduated secondary teachers all of which are subject to the controlled bursary scheme

Occupation	Estimated inputs, 1963/1969[2]						Estimated outputs 1963/1969[1]						Outputs 5 year total	
	63/64[3]	64/65[3]	65/66[4]	66/67[5]	67/68	68/69	63/64[6]	64/65[6]	65/66[6]	66/67	67/68	68/69	Gross	Net[7]
Civil engineering		13	20	55			3	2	7	13	20	55	97	94
Mechanical engineering		2	20	7			—	1	4	2	20	7	34	23
Electrical engineering		1	15	5			1	1	2	1	15	5	24	23
Medical		18	25	65			8	7	6	18	25	18	74	72
Agriculture		8	20	54			3	3	4	8	20	54	89	86
Veterinary		4	10	21			3	3	2	4	10	10	29	39
Science teachers		8	23	65			1	0	1	8	23	65	97	94
Arts teachers		56	89	103			5	6	6	56	89	103	260	252
Residual liberal arts		50	89	103			—	—	—	50	89	103	—	—

NOTES

1. Plan years and school year coincide
2. Prior to controlled bursaries scheme
3. Actual inputs. Controlled bursary scheme started
4. Places are requested by Tanzania of University of East Africa in December 1964
5. 1966/67 *et seqq.* estimated on basis of the following assumptions : (It is assumed that the form 6 output and *entry* to University of East Africa estimated in the plan will be achieved.) It is assumed that the ratio of 4 HSC (science) to 3 arts will be achieved in 1966/67. It is assumed that the government will continue to control bursaries, offering them for University of East Africa only in the occupations required for development. This involves allocating all HSC (science) quite rigidly to the professional faculties requiring this preparation and in proportions dictated by Tanzania's development requirements. It also involves offering at least 50 per cent of the arts bursaries in the graduate secondary teacher degree. It is assumed that if the University of East Africa is not able to provide the number of places Tanzania requires for its HSC holders in any of the faculties, overseas scholarships will be given by the government or secured from donors for the same courses
6. These outputs are the result of inputs from 1961/62, 1962/63, 1963/64 prior to Tanzania's control bursary scheme. Contrast these outputs with those resulting from inputs year 1964/65 onwards
7. Less 1 per cent per annum wastage. Wastage after form 6 is quite low

ADDENDUM

Information received after this report was duplicated and assembled indicates that the wastage estimate used in this table may be too low. Additional information received at the same time however indicated that Tanzania will have more places available than estimated in the plan, page 103, volume II (e.g. 353 in 1965 instead of 312 for 1965). Since theses two offset each other to a substantial degree it is believed the outputs shown here will materialize at approximately the volumes indicated

APPENDIX C

Table 6. Degree course outputs in addition to the University of East Africa

Course (1)	Total in school East Africa and overseas (2)	Minus the number in East Africa University (3)	Net number of students overseas (4)	Average per year graduating from this pool (5)	Estimated output five plan years assuming no major changes in numbers or distribution (6)	Adjusted for wastage and *No return* (7)[1]
Accountancy	41	—	41	13	65	55
Administration—public	6	—	6	2	10	8
Architect	17	7	10	3	15	13
Agriculture	34	25	9	3	37[2]	35
Arts degree (B.A.)	190	103	87	29	145	123
Chemistry	10	—	10	3	15	13
Commerce and business administration	21	—	21	7	35	30
Dentistry (five years)	4	—	4	1	5	4
Economics	69	—	69	23	115	98
Education (divide by four years degree diploma)	20	18	2	7	3	3
Chemical engineering	8	—	8	2	10	8
Civil engineering	67	22	45	15	75	64
Electrical engineering	37	10	27	9	45	38
Mechanical engineering	21	6	15	5	25	21
Forestry (silviculture)	12	—	12	4	20	17
Geology	12	—	12	4	20	17
Law	67	35	32	8	40	32
Librarian	1	—	1	3	1	1
Medicine (five years)	106	39	67	13	65	49
Mining engineering	10	—	10	3	15	13
Pharmacy	28	—	28	7	35	30
Science general B.Sc.	80	33	47	15	75	64
Social studies	5	4	1	3	1	1
Veterinary	29	9	20	6	18	15
Zoology/anthropology	6	—	6	2	10	8

NOTES

1. Column 7 gives the final supply figure. Estimated 5 per cent average waste per year of persons failing, dropping out or failing to return on completion of course
2. It is quite probable that the University of East Africa will not be able to expand the places in its school of agriculture sufficiently to accommodate the outputs indicated in Table 5. Those not accommodated will be sent overseas in agriculture boosting the total in agricultural schools abroad

APPENDIX D

Table 7. Total university outputs of Tanzanians, University of East Africa and overseas—five plan years—in the major science-based occupations for which the University of East Africa has courses plus graduate secondary teachers

Occupation	University of East Africa estimated outputs (from Table 5)	Overseas outputs (from Table 6)	Total estimated supply for five plan years
Civil engineering	94	64	158
Mechanical engineering	33	21	54
Electrical engineering	23	38	61
Medical	72	49	121
Agriculture (B.Sc.)	86	35	121
Veterinary	39	15	54
Graduate trachers (science)	94	—	94
Science-based total			663
Graduate teachers (arts)	252	3	255

Estimated arts degrees outputs[1] *1964/65–1968/69*	University of East Africa	Abroad	Total estimated supply
B.A. excluding all those which may be involved in 'Graduate teacher (arts)' above	312	123	435[2]

NOTES

1. Assumes continued direction of students to fill national need for manpower requirements. The actual figure will undoubtedly be considerably smaller as government exercises increased directive influence on overseas scholarships from donors. The science-based outputs will increase correspondingly
2. An outside figure

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Manpower, employment and education in the rural economy of Tanzania

Guy Hunter

Foreword

This monograph by Guy Hunter, a member of the Institute of Race Relations in London and a long-time student of East African educational and manpower problems, is one of five case studies in the IIEP African series which were carried out in Tanzania with the generous co-operation of the government officials. The other four deal with the educational planning process as it has evolved in that country; with educational costs and finance; adult education; and integrating educational plans with recent estimates of future manpower requirements of the modern sector.

The present study is of a different nature. It is concerned with educational and employment opportunities for the huge section of the population—at present over 95 per cent of a given age group in Tanzania— who have at most a full or partial primary education (just over half) or no formal education at all. Since Tanzania, like most developing nations, is overwhelmingly a rural society, most of the monograph deals with the expansion of opportunity for productive employment in the rural economy, and with how to make fruitful—and not to waste—the existing investment in primary education, which absorbs about half of the total educational budget. It is accordingly concerned with both educational planning and manpower policy, not simply as a means of filling known needs for special skills in the modern sector, but as a means of making maximum productive use of all human resources. In short, the author comes to grips with a central problem that is plaguing many developing countries today, namely how to balance education and job opportunities, especially at the broad lower levels of the manpower pyramid, and how to use education not merely to fill jobs but to help create them.

In this context 'education' is given a wider meaning, to include *all* educative services, and in particular those, such as agricultural extension, which directly increase economic opportunity. Thus, the study goes well outside the customary limits of educational planning, in the belief that only by doing so is it possible to see formal education itself, and the financial and planning problems which beset it, in its proper context in the total social and economic structure.

Most students of development will probably share Guy Hunter's cardinal premise that accelerated rural development and agricultural productivity are prerequisites to successful industrialization and over-all national growth in countries such as Tanzania. Many will also agree that the latent wealth of these nations resides above all in their human resources, and thus education has a prime role to play in the complex process of modernizing the traditional sector of such countries. But to move from these broad premises to practical strategies and plans of action is no easy matter, and it is this which Mr. Hunter attempts to do, using Tanzania as an illustrative model. His conclusions, however, may not receive the same measure of agreement as his premises, for they are somewhat unconventional. His purpose is not to counsel Tanzania, but to encourage further fruitful discussion that can ultimately help all developing countries in attacking an exceptionally difficult problem shared by most. The Institute does not necessarily endorse Mr. Hunter's suggested courses of action but presents them as illustrative of how the planning problems of developing education for rural society may be creatively re-examined.

PHILIP H. COOMBS
Director, IIEP

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1 The fundamental problem

The central task of development is to use potential human and natural resources more productively. This monograph is concerned primarily with the human side (manpower) and with all forms of educative effort. But the use of human potential is inseparable from economic opportunity; the earlier part of the study is therefore concerned with the range of economic opportunity in Tanzania today, and with means of widening it so that human resources can be more productively employed. Realistic educational planning depends upon this.

Earlier studies of manpower in Tanzania (and in most developing countries) have been concerned primarily with 'high-level' manpower, both administrative and technical, for government, industry and the whole modern sector of the economy. Success in providing it—and Tanzania is succeeding—replaces the small, highly paid cadre of foreign civil servants, professional men and technicians with specially trained nationals. Further, it lays the basis, in education at the second and third levels, for a further expansion of the modern sector, and this has implied a rapid expansion of the whole system of formal education at these levels.

But Tanzania, at independence, was 90 per cent a rural society, with a very small modern sector. The replacement of expatriate staff by nationals does not by itself alter this situation; there remains the enormous problem of providing more productive and satisfying activity for the vast majority of Tanzanians who are self employed in the rural economy. Manpower planning, in so far as it is only meeting the demand for a relatively small number of modern skills, is neglecting the manpower of four-fifths of the nation. This study is therefore starting from an entirely different standpoint. It does not deal with higher manpower or with the main urban industrial modern sector. It is concerned with the 90 per cent of people in the rural economy and with the 97 per cent of each year's children who never enter the second level of education. Manpower policy is treated as a policy concerned with the productive use of the maximum volume of human resources in the nation as a whole.

This is not to equate manpower policy with general economic policy. To involve an ever-increasing proportion of citizens in more productive activity requires not only economic opportunity but educative effort—both the training of educators and technical staff to advise people what to do, and some degree of education in the people themselves, so that they can more readily respond.[1] This effort is costly in recurrent expenditure.[2] Manpower policy should therefore be concerned with the right balance and structure of educational expenditure in relation to economic opportunity; it deals both with those who initiate opportunity and with those who can use it. It is the bridge between economic activity and educative effort.

This balance is more vividly illustrated by asking, 'Why is Tanzania poor?' There is high potential in much of her soil, much of it still unexploited; there are other natural resources awaiting development. There is also a great reservoir of undeveloped human capacity. How does this tantalizing situation arise that resources are there and people are there, yet the two cannot be brought into productive union?

The low level of production is partly due to lack of capital, as the catalyst between labour and physical resources, and this is especially marked in the road and transport system and the control of water resources: higher production would also have to find external markets. But capital is not to be thought of simply as money injected from outside. It is mainly generated in the course of development—the farmer who makes bricks and builds a tobacco-barn is literally generating capital from labour and land; the co-operative which buys a tractor from the proceeds of a cotton crop is doing the same. The other major constraint is the shortage of the educative effort which is needed to make labour productive. Very large improvements in productivity can be put in train with extremely small capital inputs by education in better methods. Educative effort has to be paid for by recurrent income.

The decisive shortage of educative effort does not lie, at the present moment, in the system of formal education. This may seem a quite extraordinary statement to make when over 45 per cent of all Tanzanian children of school age cannot enter school for lack of recurrent income. But the vital fact is that some 46,000 young people in Tanzania completed seven or eight years of education in 1965, for the majority of whom no really productive activity can be found. Thus, there is the

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1. The distinction between advice and response, and the degree and type of education required for each, has been much neglected in manpower studies.
2. For a useful review of the main literature on the role of educative services in agricultural development, see Clifton R. Wharton, 'The Educational Implications of the Requirements for Agricultural Progress', *The Role of Education in the Early Stages of Economic Development*, Social Science Research Council Conference, Chicago, April 1963.

gravest danger that this great investment in formal education will be half wasted because economic opportunity for the product has not been created. Shortages of recurrent income are felt in the agricultural and animal husbandry extension services, in staffing community development, in technical and managerial staff for the settlement agency, in staff for simple post-primary training, in full-time leadership and administration of national service. Many of the boys with seven or eight years' education will eventually drift back to villages where the land which could grow rich crops is yielding a pittance, where low-grade cattle are wasting the pasture, where uncontrolled water resources are running to waste, largely for lack of the initiators and advisers who are needed to introduce modern productive methods. Without help, these teen-age boys and girls, upon whom almost 50 per cent of the educational budget has been spent, have neither the social standing, nor the knowledge, nor the resources to alter the pattern of subsistence farming among their elders. It is an illusion to suppose that formal education by itself achieves economic change in the traditional rural communities characteristic of tropical Africa.[1]

The Government of Tanzania is acutely aware of this problem. It has already taken, in principle, the two most vital steps needed to attack it—giving a high priority to agricultural and rural development, and restricting firmly the further expansion of recurrent expenditure on education until it can be better matched (and paid for) by economic advance.

The problems which this monograph will consider in more detail are how to plan the educative effort within the limitations of recurring finance so that it contributes most to enlarging economic opportunity and wastes least of the investment in education which has already been made. I must stress that the monograph deals with the educational services as a whole—not only schools but agricultural extension, community development, co-operatives, adult education, youth and national service, vocational and technical training. It will consider in particular the means: (a) to improve the effectiveness, and if possible the scale, of the educative services directly affecting opportunity; this involves questions of organization, deployment and finance; (b) to identify the cheapest methods of achieving advance through such methods; (c) to make the increased production pay for any additional services; (d) to call upon the energy, experience and initiative of the

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1. Cf. V.L. Griffiths:

'1. To educate regardless of employment opportunities may work in a society that is fluid and where individual initiative is prized; it is not effective where society is only emerging from a static and authoritarian stage.

'2. The schools alone are helpless in effecting any dramatic change in rural life. They can only be effective as part of an economic and social plan which (a) makes farming economically attractive and (b) creates a sympathetic youth and adult opinion to back the progressive aims of the schools. The lead for this has to come from the top.'

The Contribution of General Education to Agricultural Development Primarily in Africa, paper prepared for the Agricultural Development Council, Inc., 1965.

most active of the adult population, whatever their educational background, as initiators and trainers; (e) to maintain the alertness and if possible improve the capacity of those who have fallen out of the primary education system, through simple social organization with some educative content; (f) while pursuing every long-term policy which will maximize simple forms of employment for primary school leavers, to develop also short-term methods which will provide useful activity, training and a contribution to national effort; (g) to consider the implications of all these measures for the future planning of educative services.

2 Labour force, employment, school leavers

The latest estimates for population and labour force were being prepared by Robert S. Ray for the Tanzanian Government at the same time as this monograph was being written. His report and this monograph were therefore written simultaneously but wholly independently—a fact which may add weight to those points upon which both reports agree! However, with the kind consent of the Tanzanian Government, Mr. Ray was able to release to the author the basic figures in Table 1 and in the paragraph following it.

TABLE 1. Population and labour force (in thousands)

	Male	Female	Total	Rural	Urban[1]
Total population (1964)	5 127	5 121	10 248	9 783	465
Population 14-64			5 439		
Labour force[2]	2 189	1 616	3 805	3 663	142
Total wage-earning employment (1964)			352		

NOTES
1. Settlements containing 5,000 or more Africans in a gazetted area
2. The non-institutional population 14 years and over less those outside the labour force

The educational attainment of the rural labour force has been calculated as follows[1]: 1,966,000 for those with no education; 1 million in standard IV; 545,000 in standards V-VII/VIII and 152,000 above standard VIII, making a total of 3,663,000.

While these figures show clearly enough the small section of the total labour

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[1] In Tanzania the term 'standard' is used to designate the first eight grades of primary education. These primary standards are being reduced progressively from eight to seven years.

TABLE 2. Educational progress of age group (approximately 8 years) available to enter standard I in 1961/62 (Tanganyika)

Age group	In thousands	In percentage
Did not enter school (1962)	117	46.8
Up to four years' education	81	32.4
Up to seven years' education	45	18.0
Entering secondary (1969)	7	2.8
Total age group	250	100

force which is in wage-earning employment and the general levels of educational attainment, it is of especial interest to look at the educational history of a particular age group. Table 2 has been prepared from projections of enrolments supplied by the Ministry of Education.

If the 243,000 children who will have had anything from no education at all to a full primary course are to be considered, what are their prospects of wage-paid employment?

The Directorate of Development and Planning estimated a growth of total wage employment to 460,250 in the fiscal year 1968/69,[1] of which the monetary sector of agriculture would contribute 197,500 and manufacturing 42,050 (almost double the 1964/65 figure).[2] The longer projection to 1978/79 gives a figure of 728,300 with an annual growth rate of 5.1 per cent in employment and of 7.7 per cent in gross domestic product.[3] Here it is worth mentioning that even such high gross domestic product growth does not necessarily result in high rates of employment growth—for example, in Mexico a growth of over 7.0 per cent per annum in gross domestic product gave only a 2 per cent growth in total employment.[4] However, even if the most optimistic forecast is accepted, it is clear enough that employment will still fall very far short of the available labour force, which by 1979 will be well over 4.5 million. For the present five-year plan (1964-69), Thomas and Seal estimated the total of new jobs at 116,000; standard VII/VIII leavers at 231,520 and all new entrants to the labour market at 1,150,000.[5] If the jobs available are considered along with young people reaching the age of 16 in the single year 1969, the comparable figures are: 23,000[6] as a total of new jobs; 40,000[7] for standard VII leavers

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1. *Survey of High-level Manpower Requirements and Resources for the Five-Year Development Plan, 1964-65 to 1968-69*, prepared by the Manpower Planning Unit under the direction of Robert L. Thomas, the Ford Foundation Manpower Adviser to the Directorate. Dar es Salaam, Government Printer, 1965.
2. It is recalled that employment was falling in the period 1960-64 (from 417,000 to 351,000).
3. Later figures by Thomas give growth rates of 7.1 per cent and 14.9 per cent respectively.
4. Charles N. Myers, *Education and National Development in Mexico*, Princeton, 1965.
5. R.L. Thomas and J.B. Seal, paper to East African Staff College, 1965.
6. Five per cent per annum wastage (death, retirement, etc.) on 450,000 employed implies 22,500 vacancies per year.
7. The figure will probably rise somewhat.

(excluding secondary entrants); and 243,000[1] for all 16-year-olds (excluding secondary entrants). For these 23,000 jobs all the 16-year-olds would compete, not only with adult unemployed, but with all the school leavers for the past five years, except those few who had already found employment.

Thus, it is startlingly clear, both from the total labour force and employment statistics, and from the school-leaver projections, that the vast majority of the young people now in school must be, like their parents, self-employed, and self-employed in the rural economy, where 95 per cent of Tanzania's labour force live. Even the 40,000 who complete their primary course each year without entering secondary will have a very slim chance of finding paid employment—perhaps one-quarter of them may do so every year.

Naturally, the proportions of the problem varies from Region to Region. Thus, in Iringa Region only about 32 per cent of children were entering standard I in 1964, while of the 1,182 standard VIII leavers (903 boys, 279 girls) in 1965 only just over ninety boys and forty-five girls could find places in secondary schools.

In fact, although the number of standard VII/VIII leavers per head of population varies, the proportion of about 10 per cent entry into secondary is kept pretty constant. (More than two-thirds of leavers are boys.) Kilimanjaro Region with probably 85 per cent of all children entering school, with again more than 80 per cent proceeding past standard IV to standard V, is quite exceptional. It provides a number of most interesting hints about the possible course of educational and social development in other Regions once their economic potential is fully developed.

Without labouring these figures any further, it is clear (a) that wage-paid employment will continue to be a small proportion of total occupations—not as much as one-quarter, even by 1980; (b) that, in consequence, to involve a higher proportion of the people in more productive activity means making self-employment more productive; (c) that the vast bulk of self-employment will be in agriculture and all the derivative occupations in the rural economy.

TABLE 3. Places available in secondary education

Region	Standard VIII leavers	Secondary places
Iringa	1 182	135
Dodoma	1 472	147
Arusha	3 000	328[1]
Kilimanjaro	12 290	1 017
Morogoro	(3 400)[2]	(400)[2]

NOTES
1. Of this total twenty-seven places are in secondary technical, six in commercial and twenty-eight in teacher training
2. Approximate figures

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[1] This does not allow for deaths during 1962-69 in the age group.

3 The initiation of rural development

It is essential to stress, and to stress again, that self-employment in peasant farming can be productive and yield relatively high cash incomes; and that much of the wealth of Tanzania comes from the self-employed, e.g., the coffee growers of Kilimanjaro or the cotton growers of the Lake Region.

In East Africa as a whole the dominance of primary industries[1] is readily seen from the statistics of gross domestic product in Table 4.

The object of the Tanzanian plan is both to bring more of agriculture into the monetary economy and to reduce the relative weight of primary industries in the total domestic product. This means a very large transfer from subsistence to cash-crop farming; but it does not necessarily imply a very large movement in agriculture from self-employed farming—perhaps on larger acreages—to wage employment. The peasant farmer, on his own land, growing valuable cash-crops, with co-operative marketing and some common technical and even managerial services, will remain the main basis of Tanzanian wealth.

The Tanzanian five-year plan specifically recognizes this, and it is in terms of productive self-employment in modernized agriculture that much of the growth of wealth in Tanzania is planned. The rough targets for 1980 are: 400,000 households (2 million people) in the non-agricultural sector; 400,000 households (2 million people) in the modern agricultural sector, of which half (200,000) will be on newly opened land; and 2 million households (10 million people) in traditional but improved agriculture.[2] Thus agriculture and its associated occupations are expected to provide a livelihood for 12 out of 14 million Tanzanians.

TABLE 4. East Africa—Gross domestic product at factor cost, 1964

Sector	Monetary economy	Non-monetary economy	Total (£ million)
Primary Industries	200.2	195.3	395.5
Manufacturing and construction	62.6		62.6
Trade and transport	124.9		124.9
Services	47.3		47.3
Rents (including ownership of dwellings)	24.6		24.6
General government	70.3		70.3
Total	529.9	195.3	725.1

SOURCE
East African Economic and Statistical Review, The East African Statistical Department, June 1965

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1. Agriculture, livestock, forestry, fishing and hunting, mining and quarrying. Mining and quarrying is relatively a minor item.
2. *Tanganyika Five-year Plan for Economic and Social Development, 1 July 1964—30 June 1969*, Dar es Salaam, Government Printer, 1964.

The existing extension services

It is absolutely clear that the present agricultural[1] extension services and training institutions are not strong enough, either in numbers or quality, to achieve at reasonable speed the national agricultural revolution which is demanded.

To state this without more constructive suggestions is unhelpful. The reason the services are too small is that the recurrent income of government is not large enough to carry a heavy increase in paid agricultural staff. Economy in recurrent expenditure—and in capital expenditure which will involve loan service—therefore becomes a rigid test which any proposal for expansion must pass. Where increases are suggested they must be clearly related to direct increases in revenue.

According to official figures, the expected outputs from training, inside Tanzania and from students now overseas, should be adequate to fill the vacancies in the existing and proposed establishments. Table 5 below gives the main projections on this, showing that expected output from training is able to match requirements *for the established posts*. However, if recurrent finance could be found, the Tanzanian Government would perhaps agree that a considerably higher establishment is needed; and indeed the Thomas manpower estimates use higher requirement figures with a somewhat larger shortfall. At present the service can provide (with local variations) one extension officer to about 1,500 farming families. There is considerable anxiety that, allowing for population growth, this proportion will worsen to 1:1,700 or 1:2,000. An exercise to estimate the staff required to improve the proportion to 1:1,000 has been carried out administratively, but the resulting proposals, when submitted to the Directorate of Development and Planning and to the Treasury, had to be sharply reduced for lack of recurrent revenue to implement them.

TABLE 5. Agricultural services, 1964-69 plan.[1] Summary of manpower requirements and supply

Division	Required (unfilled vacancies plus extra for plan) Professional	Required (unfilled vacancies plus extra for plan) Technical	Supplied by training (or promotion) Professional	Supplied by training (or promotion) Technical
Extension	20	230	20	230
Development	21	94	20	73
Water and Irrigation Departments	30	100	30	100
Veterinary	32	47	32	47
Research	46	20	31	20
Training	19	30	19	30
Total	168	521	152	500

NOTE
1. The author is indebted to the FAC Regional Office, Dar es Salaam, for these figures

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[1] For brevity, 'agricultural' is used to cover agricultural, veterinary, fishery, forestry, agro-mechanic, survey, farm-planning, research—in effect, all the services and skills needed for agricultural advance.

Even 1:1,000 is far below what is needed in an era of rapid transformation. International estimates recommend 1:500 as a minimum target. On the Sudan Gezira scheme (which is now long established and successful), the proportion is 1:250.

Two tendencies are noticeable in Tanzania today. The first is that, on new settlement schemes, and on many others, where major advance is planned or in action, one officer is needed, as adviser or manager, to a far smaller number of farming families. In some cases (e.g., the Upper Kitete Pilot Settlement) there has been a graduate manager for only 100 families. Admittedly, as these schemes expand, and as growers become more experienced, a single manager will cover more farmers. But experience shows that keen, modernizing farmers make more demand on advisory services, not less. Schemes and experiments which are rightly proliferating throughout the country are also building up a staff requirement far beyond current and proposed establishments. A ratio of 1:500, at least in the fast developing areas, will become essential for full success.

The second tendency is to require more specialized staff. The normal training of extension staff would deal with the normal run of subsistence agriculture and cash crops traditional in an area. But crops new to an area are being introduced throughout Tanzania, and the type of activity is being changed by the introduction of mechanization, by new processing, and by specialization. Not only tractor maintenance but the management of a tractor fleet; day old chick production; bulkseed production; further local processing of coffee, sisal, animal products; a great increase in irrigated farming—all this change begins to require a large number of minor specialists. To give only two examples—the urgent requirements of one regional agricultural officer for an additional eight-member staff included a specialist in bulking seed; an over-all manager for a fleet of eight tractors; an irrigation agronomist for an extensive irrigated zone; a forest nurseryman; a manager for a day-old chick production unit, and a manager for a cotton/cattle settlement scheme. Again, in another Region (Arusha) there is a considerable growth of African farming groups on large, unfragmented mixed farms. Technical and management advice to these groups, some of whom are inexperienced in this scale of farming and short of working credit, is badly needed and quite beyond the strength of the normal extension service to provide. Similar examples could be quoted in each Region visited. The Tanzanian Government is well aware of these needs, some of which may be met by technical assistance or by bilateral aid. But in the longer run these jobs should be filled by trained Africans, and it is shortage of recurrent income which keeps down the increase of training with its consequent salary bills.

Economy in recurrent expenditure

There are a number of ways in which economy can be achieved in government recurrent expenditure on these services:

1. By making high-value crops carry directly the cost of extension services. There are many examples—'outgrowers' schemes for tea (Kenya Tea Development Authority), tobacco (East African Tobacco Co.), cotton (Sudan Gezira Board), and many co-operative schemes which carry the cost of extension in the difference between the price paid to the grower and the selling price. There is, of course, an element of cost in the form of working capital here when new schemes are started. The advisers have to be employed before the new scheme is productive. But successful schemes will absorb these salary costs quite quickly.

   The cautionary note to this method is that administrative cost must be kept to an absolute minimum. There is acute danger that, both with boards and co-operatives, the overheads of administration and (particularly) marketing become excessive. This not only loads the economy with unneeded clerks and officials—worse still, low prices discourage the grower from expansion and higher productivity. A very clear distinction needs to be made between essential advisory and technical services and marketing administration.
2. By bringing the farmers to the extension service, rather than vice versa (the doctor's surgery principle). Farmers' training centres (twenty in the five-year plan) may achieve this efficiently. It may be worth considering also the Malawi experiment of having more, but smaller and cheaper, centres (£ 3,000 as against the plan's £20,000 capital cost), within bicycling distance of farmers in densely populated areas, staffed by a slight increase of the regular extension service. The economy will only be achieved if the throughput of the training centre is high.
3. By concentrating the extension personnel on areas of high potential and high local energy. The return in increased production per extension worker may be extremely low in areas where either soil or climate conditions are intrinsically bad or the local people are still resolutely conservative. Even in the short tour undertaken by the author there were several instances of cash-crops grown but never picked (cotton and tobacco) because the growers had gone off to sell their maize crop in another district, or on a traditional honey-gathering expedition.

   The principle of concentration has a wider importance. It not only means that complementary branches of the extension service can give each other mutual support, and that there is far more chance of paying for the service through increased yields, thus increasing cesses and government revenue; it will tend to create broad zones of higher economic activity, to which population is attracted, in which indirect employment is generated, and in which it will become far more economic to provide roads and social services. This is the principle of 'villagization' on a larger scale. The poorer or more conservative areas will later seek to copy their success and be more willing to accept advice.

   Where the extension services are below the threshold of effectiveness, for whatever reasons, the skill and salaries (recurrent expenditures) are being largely wasted. In Tanzania, with its huge land area and scattered resources, concentration in broad strategic zones is of particular importance. A limited degree of concentration has already been accepted as policy.

4. At the right stage and in the right circumstances it may be worth while to increase the 'infantry' of the extension services by a renewed use of field assistants. This stage may be in eighteen months when the supply of proper supervision (certificate and diploma officers) should be sharply increasing and this implies an early resumption of this level of training. The circumstances are probably where a large number of new schemes are showing signs of success. (There are sixty-three nationally approved projects in Morogoro Region alone, with only eight agricultural staff of diploma level or above.) The type of training required may be for carrying out a mass of simple but essential tasks (dipping supervision, for example) upon which staff with higher training would be wasted. This is a low-cost way of adding to the service.
5. Even less costly is the use of 'model' farmers to encourage and advise others. Their advice is the more acceptable from the visible evidence of their success.
6. It may be possible to use more of the existing expenditure on youth service, national service and community development for direct assistance in agricultural advance.
7. It may be possible to divert funds from certain other services within the agricultural programme to strengthen extension work. (See Section 4.)
8. It may be possible to obtain additional technical assistance in the form of expert personnel. Although not inconsiderable, local costs are involved such as for housing and transport. These are certainly lower than the costs of additional training and full salary payments.

Training

Where the extension staff is carried by the crop, the problem of recurrent finance may be solved, but the staff has still to be found and trained. Nor will diversion or reallocation of financial resources to agriculture of itself create trained personnel. It is therefore submitted that the evidence already exists that the five-year plan in agriculture will require a very early expansion of training, and that this may be needed (a) at field-officer (diploma) level; (b) by resumption of training for field-assistant level (assuming that the target outputs of Tengeru and Ukuriguru agricultural training centres at assistant field-officer (certificate) level are met. In particular, planning of field-officer output will need the greatest care. The output from Morogoro College may be much smaller than is anticipated, if a proportion of students go on to a degree course, as some are sure to wish to do. If there is any danger that Morogoro itself will become a university faculty of agriculture, it would be necessary to start at once to develop an alternative source of field officers, whether by upgrading the best of the new certificate officers (who also now enter training at form 4);[1] by instituting a new set of courses, possibly designed to produce more specialized officers; or by increasing the number of students sent overseas.

Of the foregoing suggestions for economy, some are designed to transfer the cost of extension from the government to the farmers, others are designed to make more efficient use of existing personnel or finance from other services, and the last invokes overseas aid.

While all these should help to achieve far better results without heavy increase in already planned government expenditure, the total result is still unlikely to be commensurate with the need. To achieve a major agrarian advance quickly will almost certainly imply a considerable and painful transfer of resources from other branches of government expenditure. 'Priority' for the agricultural programme, in hard fact, does imply sacrifices elsewhere, later to be redeemed by rising national income.

4 Economy in methods

The emphasis on economy in the preceding section naturally suggests some examination of the methods chosen to initiate agricultural change with special reference to economy in capital and recurrent expenditures on the necessary educative services. The detail of Tanzania's impressive agricultural programme is, of course, a matter for specialists. But there is one area where a major and vitally important planning choice remains open, and this is in relation to the large programme of village settlement. The government wisely decided to launch this scheme by a number of pilot projects, designed to test its costs and its problems. These schemes have now begun to yield the experimental results which a pilot operation is designed to give, and upon these results will depend important decisions on future capital and recurrent expenditures.

Some seven pilot settlement schemes, and a further nineteen or twenty schemes either assisted by the Village Settlement Agency or taken over from the Tanganyika Agricultural Corporation or under other auspices, already exist. In addition, there is a fast growing number of group farming schemes, mainly advised by the extension staff (Ministry of Agriculture), as well as voluntary schemes of many different kinds. There is already some evidence that many of the crucial objectives for

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[1] The term 'form' is used in Tanzania to designate the six grades in education at the second level.

TABLE 6. Settler debt (repayable) for a sample settlement

Costs	In £	Costs	In £
House (£120 for steel frame plus £85 for completion costs)	205	Machinery	60
Land clearing	145	Recurrent costs (2 years at £35)	70
Public building costs	36	Barn construction	25
Water charges	14	Roads scheme costs	20
		Subsistence costs	36

NOTE
Total: £611, estimated to rise to £700 by 1966

which the pilot settlement programme was set up can be achieved with considerably less capital and recurrent expenditures. The £13 million programme of settlement implies an investment of about £800/£900 per farming family, and of this, £600/£700 is treated as a debt incurred by the farmer and repayable over twenty-five years. Much of this expenditure is related to initial mechanized clearing and cultivation, to housing of farmers and to social services. Table 6 shows an approximate sample breakdown of costs for one such scheme.

In contrast, on some group farming schemes, the settlers build their own houses and do much of the work of land clearance and initial cultivation. For example, on the Nduli (Iringa) Group Farming Scheme (tobacco, maize and (later) cattle), the farmers themselves, with the aid of credit loans, made the bricks and built both their houses and the tobacco-barns (one to each group of four or five farmers). After a difficult start (a loss was made in the first year), the groups achieved in 1965 an average of 890 lbs. of tobacco per acre, a net income after repayment of credit of £125 per individual member, the credit being repaid yearly from the crop. They were trained in the new skills by courses in the local farmers' training centre, are helped by a single assistant field officer (with advice from the regional agricultural officer) and have no long-term debt to repay. Although the scheme may go wrong (it is expanding faster than the regional agricultural officer would wish, with now over 600 farmers), this combination of self-help by experienced individual farmers, organized co-operatively and advised by only the regular extension service, shows what can be achieved, at extremely low costs, in favourable circumstances. In contrast, the recruitment of urban unemployed, or wholly inexperienced young men, onto schemes where government and tractors are expected to do most of the work, and where a debt of £600 or more is incurred initially for housing etc., may well prove highly expensive and even agriculturally unsuccessful.

If in fact there is a reappraisal of the government pilot schemes which involves a lower investment, funds so released could well be invested in strengthening the extension service. There is certainly much evidence that the return on employing one efficient extension officer to develop new crops with existing farmers can be many times higher than that from the same investment on more elaborate transformation or resettlement schemes.[1]

The co-operatives have certainly a vital part to play in this agrarian revolution. The intake of secretaries to primary co-operative societies is now reaching the standard VII/VIII level of education (as against an earlier average of standard V), and the co-operative college is obtaining highly encouraging results in the training of this young material. The new Co-operative Education Centre has also great possibilities in improving co-operative management in both societies and unions and in forgeing closer links with the extension service. Good management skills in the co-operative staff, especially when applied to new settlement schemes, could go far to cut down the need for special extension staff, for small numbers of farming families. A good career structure for co-operative staff, allowing movement between the producing and processing units (the Victoria League Co-operative is developing a vertical structure from raw cotton to textile mill), and even between government and union staff, could do much both to attract and to hold promising young entrants and to relieve the agricultural extension services of much purely managerial and marketing work.

Finally, the advantages of semi-industrial investment in cash-crop production, whether by private companies or public corporations, when associated with 'outgrower' schemes, should perhaps be emphasized again. Such schemes can easily attract overseas capital, whether by loan or commercial investment; they introduce managerial and industrial skills which can be passed on; they offer a good living to small holders on their own land; they can carry the extension costs; and they are large enough to make mechanization economic. This is a formidable list of advantages.

Participation and self-help

The preceding paragraphs have dealt mainly with educative services involving trained personnel and central financing. But the President and the Government of Tanzania have constantly emphasized the need for self-help and the role of village development committees. In this stage of Tanzania's growth and budgetary resources, an immense share of rural development must be carried by the chief beneficiaries—the farmers themselves. Nothing could be more mistaken than to underestimate the real skills which exist within the farming community, and indeed among members who are virtually illiterate. The achievement of some mature farmers in group farming and other schemes, in growing new crops by new methods with a minimum of instruction, are deeply impressive. The successful farmer himself is the best advertisement for new methods and he can to some extent be used as a trainer and initiator. Especially where new land is being opened up, the mature farmer, content with a good traditional house if he can see his income expanding, well adjusted to farming life, is a tremendous asset. There have been some suggestions of inducing such men, whose ability is proven, to act as pace-makers in new schemes, and there is a possibility that they could be so induced if a larger acreage or land of higher potential can be offered to them. It is doubtful if modern housing and social services can be afforded as an inducement in the first instance. When the profits from better crops begin to come in, the individual will be able to improve his house and the government will have more to spend on social services.

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[1] 'Concentration on schemes which require capital and skilled manpower in large quantities for large-scale development schemes is the most expensive road to development. It usually means that . . . government is unable to devote resources to . . . breaking bottlenecks constraining marginal improvements in the small farming systems. These improvements are small but generally applicable on a large scale and result in a much greater potential over-all impact on the agricultural sector.' A.M.M. McFarquhar, 'Problems of Agrarian Development', *Ministry of Overseas Development Conference*, Cambridge, 1964.

Central planning and dynamics

To get both co-ordination and drive behind the huge programme of rural change has presented an exceptionally difficult problem, since several ministries (agriculture, lands and settlement, education, health, community development, transport, commerce and co-operatives) are all deeply involved. The new decision to incorporate the Village Settlement Agency in the Ministry of Lands and Settlement may give it a more powerful dynamic. It is clearly vital not merely that there should be machinery for central co-ordination—as there is— but also that there should be clear and thrustful chains of command to execute co-ordinated decisions. Moreover, technical decision by the Ministry of Agriculture must play a key role. For social planning, education, health services or co-operatives cannot make up for one absolutely basic necessity—that land chosen for development and the crops chosen for it should in fact be capable of yielding a high return. If this decision is at fault, or if technical advice on execution is lacking, all the other departments will be frustrated, and capital will be wasted. Worse still, because the economic return will be lacking, there will be no break-through in increasing recurrent revenue and no increase in employment opportunity. This is a matter of priorities in the planning decision; it is included here because it is so closely related to one main theme of this monograph—that economic success must precede and lay the foundation for social services.

Other conditions for agrarian improvement

In conclusion, it is perhaps necessary to say that improvement of agricultural educative services and the methods suggested in this and the preceding section are not, of course, sufficient in themselves to achieve an agrarian revolution. Credit, capital investment, basic and applied research and many other factors are involved. For most of these, within the limits of finance, plans are already made. At an even more basic level, present systems of land tenure and of social custom in some areas may be major obstacles to progress. The point which I am stressing is that, at the final time of action, when capital and credit and technical knowledge are all available, there is still the need for a much greater provision of the human educative service—the men and women who can help, encourage, persuade and teach the farmer and the farming community to adopt new ways.

5 Indirect effects on employment

The benefits of agricultural development have been considered mainly in relation to the farmer, his crop and his income. But there are both national and local benefits far outside this. The national economic benefit is outside the main scope of this study. It is enough to mention that in many classical cases the capital for major industrial development (with its increased urban employment) has been drawn initially from the agrarian revolution (Japan;[1] or the use of cocoa surpluses in Ghana). Professor W. Arthur Lewis has said: 'The failure of peasant agriculture to increase its productivity has probably been the chief reason holding down the expansion of the industrial sector in most under-developed countries in the world'.[2] Another form of industrialization (and one well suited to the use of 'intermediate technology'[3] and labour-intensive methods) is the growth of rural industries and crafts, processing of agricultural produce (such as food, fibres, hides and skins, fish and timber). Another and often neglected benefit is the increased employment in local commercial and craft services which the additional income in farming families can stimulate. The proportion of farmers to other occupations in rural tropical Africa is far too high. This is reflected in the pressure on land (as almost the only source of livelihood) and in turn tends to reduce farm incomes (uneconomic holdings; inability to mechanize, etc.). But when the farmer earns a high cash income which is spent locally, opportunities for employment begin to multiply. He wants a better house—and needs a joiner, perhaps a plumber, and perhaps one day an electrician. He has a tractor—and tractors need maintenance. He is purchasing furniture; clothes for all his family (necessitating tailors or a garment industry even); a radio set, farm equipment, fertilizer, sacks, a pump, Butagas, fencing or wire, ox-harness, etc. His children go to school and their needs increase. The family's diet will improve, and this provides a market for other farmers' products. All this expenditure should result in employment in crafts, distribution, transport, construction and in a host of other obvious ways.

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[1] 'In Japan, in 1880, 80 per cent of the working population was engaged in agriculture . . . Between 1878 and 1915 the index for labour productivity in Japanese agriculture rose from 100 to 236 . . . In Japan no foreign loans were available in the early stages of growth, when all capital imports had to be financed by export earnings from agriculture'. K. Okwawa, *The Growth-rate of the Japanese Economy*, Tokyo, 1957; and Okwawa and Rosovsky, *The Role of Agriculture in Modern Japanese Development and Cultural Change*, Chicago, 1962. (Quoted by A.M.M. McFarquhar, op. cit.)

[2] Professor W.A. Lewis, 'Unlimited Labour—Further Notes', *The Manchester School*, January 1958; also W.A. Lewis, *Industrialisation in the Gold Coast*, Accra, Government Printer; Johnston and Mellor, Stanford University, November 1960 (Food Research Institute Studies); W.W. Rostow, *The Stages of Economic Growth*, Cambridge University Press, 1960.

[3] See particularly E.F. Schumacher, *Industrialisation through Intermediate Technology*. East African Staff College, 1965.

As one example, in the prosperous coffee-growing areas of Mt. Kilimanjaro, there has grown up a group of African 'fundis', mainly carpenters but also handymen in other skills. They learn by an unofficial apprenticeship with an older man (and may pay a little for this); they first earn a few shillings, later rather more; finally they set up on their own—they can make and put up the doors for an improved house, build a barn (by copying a professionally built model they can build coffee-pulperies), perhaps repair a car engine.

Really widespread growth of commerce in high-income agricultural areas would also quickly outstrip the limited number of Asian traders and provide an increasing opening for educated and energetic Africans. Whether this is handled wholly through co-operatives, employing wage-labour, or whether there will be room for African private enterprise is a political decision; in either case employment results, and there is a need for intelligent and literate personnel. Some of this personnel may well come from prosperous, high-density areas (such as Kilimanjaro) where there is a land shortage.

Processing of farm produce is already emphasized in the plan. At this stage it may often be best if these processing units (and 'cottage' crafts) are small and local, both to avoid heavy transport costs and to disperse employment.[1] At some stage it might be useful to introduce the 'Small Industry Service Unit' which (with the advice and aid of the International Labour Organisation) has proved extremely successful in India and Thailand.[2] These units provide simple technical and managerial advice to very small industries, and are very easily combined with simple training programmes. The extensive experience of India in this field and the volume of simple technical literature available there could certainly be of interest in Tanzania.

There is one danger to the growth of multifarious enterprise and employment associated with growing prosperity in rural areas—the danger of over-regulation. The colonial administration in particular was much given to elaborate systems of traders' licensing, minimum shop standards, and a host of petty regulations through which even the enterprising African found it almost impossible to break his way. While the large blocks of export crops, etc. must flow through highly organized channels, the small change of economic activity—which can give a surprising amount of employment, as West Africa shows—needs a high degree of freedom if it is to circulate and multiply.

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[1] Quite excellent canned orange juice is produced by a small firm in Morogoro, apparently almost wholly for local consumption.

[2] And possibly elsewhere.

Simple standards, low costs

It may be appropriate at this stage to emphasize in more general terms the argument for retaining simple standards, simple equipment, simple practical training, modest wage levels, modest types of capital investment in the general structure of an agrarian economy at its present stage in Tanzania. This is not an argument against certain strategic investments of the most modern and expensive type such as the major dam and the electric power station. These may well provide the most economic use of capital for certain major purposes. There may even be a case for the combine-harvester for use one month out of twelve, in special circumstances. But there are in all developing countries, from Nigeria to Malaya, expensive institutions turning out highly trained young men who cannot find employment in an economy with extremely little modern industry and a rural economy which will either employ cheap labour or no labour at all. There are also many occasions where schemes which would greatly benefit a local community are rightly turned down by a government department, because they are too costly. Often, however, they are too costly because of an insistence on building in permanent materials, to costly standards, by departments or contractors with high overheads, paying trade union wages;[1] and in Tanzania, even liable under new regulations to make severance payments if employees are dismissed. In such cases the community gets no building, the standard VIII lad gets no job. Foreign donors, anxious to show their generosity, are apt to set standards in building and equipment which are totally out of scale with the economy, and which, incidentally, make for dissatisfaction with the standards it should rightly use. In a swiftly changing society many economists have stressed the need for temporary buildings, simple tools and equipment, labour-intensive methods, wages which a successful farmer can afford. Change comes so fast that the buildings will need adaptation; crops and methods change and require changed tools. Above all, there are idle hands needing work, which can be given to them if the standard of costs and wages is in tune with the level of national income. More research, and application of research, on low-cost semi-permanent building is badly needed, and the same is true in other forms of intermediate technology.

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[1] For a discussion of the tendency for African urban wage levels to outrun productivity, to widen the gap between the urban and rural sector, and to reduce employment, see H.A. Turner, *Wage Trends, Wage Policies and Cambridge Bargaining—the Problem for Under-developed Countries*, Cambridge University Press, 1965.

6 The school leavers—short-term alternatives

Table 2 in Section 2 shows that 97 per cent of Tanzania's children do not enter secondary education. It is for this reason that the earlier sections of this monograph have been concerned with general and medium-term measures to develop economic activity; clearly 'special' measures are not appropriate if they have to be applied to virtually the whole economy! If, however, we neglect for a moment the 47 per cent who never enter school, there remain about 32 per cent who are getting four years and about 18 per cent who are getting the full seven/eight years of the primary course. There is some justification for seeking at least some additional means to help this group, and more particularly the 18 per cent who complete primary, on the principle of not wasting a very large investment which is already being made. The final answer is in increasing full-time employment or productive self employment, through success in the agricultural development programme. The short-term measures are primarily designed to maintain alertness and improve skill in preparation for this.

What in fact happens to these 16-year-olds who fail to get a place in secondary school or in any other form of training? Far too little is known with accuracy. After a month of inquiries made in five different Regions in Tanzania, the impression gained was as follows: Urban children will stay in town and try to get work; their aim may certainly be a white-collar job, or entry into a regular form of training. But since only a very small proportion will succeed, the rest will probably be prepared to take casual manual work—on a building site, in a sisal plantation, at a petrol pump, behind the bar in a hotel or cafe. This, at least at first, is a stop-gap measure, until the hoped for job—perhaps as a messenger in a government office—comes along.

For the boys with rural homes, the main pattern is the same, but more difficult. They will, if they can, first stay with a relative in town and hunt for work. For those who went to a boarding upper primary school, the tie with home has already been weakened. If their first try fails, they may get a bus fare from a relative and try the next town, or a big plantation which may need casual labour. They can earn a few shillings by any possible means which comes to hand. After this trial period, if they are getting desperate they may return to their home village for a while. If they earn a little money—working for a neighbouring farmer or in other ways—they may well set off on their travels again, once more take casual employment, and again return home. There is no accurate evidence for this pattern—a study of it is badly needed—but it is intrinsically probable and borne out by the evidence of teen-agers seen in this type of casual work. Community development staff appeared to find comparatively few standard VII/VIII leavers in the villages; but without specific inquiry they may be hard to distinguish from the standard IV leavers of four years earlier.

While some of the most persistent and enterprising will eventually find a job, and even a training, it is clear enough that all these months, or even years, are virtually wasted. Those who return to unimproved agriculture will have little chance to change it, and eventually, when they inherit land, are likely to have assimilated only the old traditional methods. There is scarcely need to emphasize the appalling waste of lively, trainable young men which this process involves, the loss to the economy, or the political dangers involved.

It is ironic that, because education is more widespread and secondary places have increased, the standard VII/VIII leaver today has even fewer opportunities to become trained. Grade C teacher training and field assistant (agriculture) training are both being discontinued; and all round the list of training opportunities the entry levels have been rising first to form 2 and then to form 4 in most cases today. Each year the threshold of the 'modern', educated, salaried world seems to be rising higher beyond reach of the standard VII/VIII leaver. Yet he is not just the average Tanzanian boy; that is, the boy with standard IV or less: he is still well above average, and more has been invested in him, both by his parents and by the State.

There was wide agreement among officials and others in Tanzania that the standard VII/VIII leavers were, at least on leaving school, extremely unwilling to return to work on the farm. If returning to the farm implies returning to an unreformed subsistence system in a traditional pattern, sustained and virtually enforced by the elders, they cannot be much blamed. Indeed, one very experienced observer believed that only by settling young people away from the pressure of such elders could they be given a fair chance to try modern methods. Many more questions such as the following need to be asked on this first subject:

1. Are the school leavers unwilling to return to modernized farming, where the family income is relatively high?
2. Are they unwilling to enter a new, modernized settlement?
3. Is it the type of farming, or the quality of social life and discipline in the village which is more important in forming their attitudes?
4. Is it felt that they lose face by returning to the village? If so, by whom—the school leavers, their parents, village opinion generally?

5. Is there any difference between those who left the village to attend a standard V-VIII boarding school and those who attend a local 'extended primary'?
6. Would they be more interested in looking after livestock than in cultivating land?
7. Is an individual *cash* earning of great importance? If so, is any cash payment made to young family workers on cash-crop farms?

A second, almost universal opinion is that the type and syllabus of primary education (and sometimes the attitude of teachers) influence pupils against farming as a career, or at least do nothing to prepare for it. The answers to these questions could only be found through social research; some answers might well differ in different tribal and cultural areas. Until these areas are better known it is essential to be cautious in attributing blame, or initiating action. In particular, the effects of revising the primary course (even if this is desirable in itself) might be disappointing, especially if the real difficulty lies in the social system of the village rather than in any influence of the school. This is not an argument against revision of the syllabus, which is certainly much needed. It is simply a caution that the ambient social attitudes have to change too.

What should be the destination of the standard VII/VIII leaver in the rural economy? In general terms he should be an eager participant in a modernizing farm economy, or an employee in the relatively simple crafts and commercial life surrounding this richer farming life—and, indeed, an employee with prospects. Can he be helped to achieve this? A number of current suggestions may be considered:

Direct settlement. Opinion is against any attempt to settle 16-year-olds straight from school on their own holdings. It is not only that the boy is too young in physique and experience; he has not yet discovered by bitter experience that white-collar work is not available.

Apprentice settlement. There is one special case where settlement, at least soon after leaving school, may work well, and this is where a boy can be settled as an apprentice-member of an improved farming group. At Nduli (see Section 4), where the tobacco farmers are in groups of four or five, it has been suggested that one such young man could join each group, with a smaller acreage to look after, learning the methods and skills from his experienced partners.

Pre-settlement training. The YMCA scheme at Marangu provides an example of another possibility. The aim is to take sixty young men, about two years after leaving school, and give them a one-year training in modern farming on plots, in varied soil and climatic conditions, after which they would be available to the settlement agency as tested young pioneering farmers for new schemes. A somewhat similar scheme (not visited) is running at Mahiwa, in the Mtwara Region.

If these schemes succeed, and provided that the basic principles of selection and training are observed, such schemes could be widely extended either through the extension service (on training farms as initial sub-pilot schemes on larger areas about to be developed) or by the youth or national service organization, which could run a series of such training farms in varied ecological conditions to supply competent young settlers. Some youth service direct settlements already exist, e.g., outside Dodoma (growing wine) and Arusha (proposed for mixed farming). Experience of direct settlement of similar young men (standard VII/VIII plus two years or more in the hard world before settlement) in Uganda—settlement run by Stephen Kerr in Ankole—appeared highly successful; but these young men had built their houses, had six acres of good land (one acre of tea) and were intending to marry and stay; thus the investment was one graduate to 120 settlers, not one graduate to a constant yearly supply of sixty eligible settlers as at Marangu. The factors which would need careful watching are (a) the supply of really suitable land; (b) the willingness of trainees to start again elsewhere after a year's work on the training farm; (c) the quality of the supervision—not merely technical knowledge but sympathy and firmness in dealing with young people.

National service. One possible use of youth or national service has just been mentioned—the farming training unit. But there could certainly be an argument for a far larger national youth service, through which a good proportion of older teen-agers should pass. There is no doubt that, well organized and well officered, such a corps would be valuable to youth and valuable to the national economy. There is a stage[1] —and in Tanzania it is now—when a highly mobile 'task force' can perform all sorts of invaluable pioneering services in a developing economy such as clearing land, building small irrigation schemes and bridges, tree-planting and simple construction. What is at issue is the recurrent cost of running such a force on a big scale. (At one stage Zambia found the youth service was costing more than the provision of secondary schooling for its members.) It was impossible to make a detailed study of costs, but no doubt this has been carefully considered (and the costings of the Kenya Youth Service compared).[2] It is certainly one choice of activity and training which cannot be lightly dismissed.

Craft training or simple apprenticeship. The need for this has been mentioned. It is a sign of over-concentration on 'high-level' manpower, with its standards of full trade school, trade-tested, city and guilds artisans and technicians, that so little has been done lately to provide the simplest additional training for rural handymen—often standard VII/VIII boys—who can both earn a living and perform a most useful service at prices which the farmer will pay. At this moment, when the local self-trained 'fundis' are appearing, the last formal trade school (Moshi) is about to finish its last trade courses (plus a relic course from Ifunda), after which both Ifunda and Moshi will be secondary technical schools and there will be no trade school in Tanzania.[1] The reason is mainly that the number of modern industrial employers who will pay full rates for a fully trained artisan is still too small. Yet, in a 90 per cent rural society starting an agrarian revolution there will be thousands of jobs for rural handymen—vehicle maintenance, pump repairs, blacksmithing, leather and rope work for farms, fencing and, above all, house building. Ironically, the effort to produce rural handymen was tried several times in colonial times—in development centres in Zambia and in Uganda; it failed partly because it anticipated the real growth of rural incomes which is only now beginning to gather headway, partly because certificates and qualifications and trade tests crept in. It could perhaps succeed now.

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[1] In fact, the stage when new infrastructure is being laid down. The 'navvies' in the United Kingdom—mobile labour groups—and similar groups in the United States of America, played a most important part in the early stages of the industrial revolution, while Yugoslavia made great use of students and young people in the early period of nation-building.

[2] £ 150 to maintain one serviceman in the field per annum.

The simplest and cheapest form would be the establishment of workshop-class-rooms in large villages or semi-urban centres, running extremely simple short courses (perhaps eight weeks) to improve simple carpentry, masonry, and mechanical skills for young potential 'fundis'. Teaching could rest on one all-round instructor plus part-time instruction from local trained men. (The pupils would have to find lodging nearby.) Such centres would be established only in areas where purchasing power was already rising owing to successful agricultural development, so that demand for such services could be confidently assumed. A few pilot schemes of this nature might be worth while as a start.[2] Such centres might also be associated with the simple forms of apprenticeship like those developed in Kilimanjaro Region. Community development staff or the 'kumi-kumi' organization[3] could possibly help in placing apprentices, especially where they had taken the local craft induction course. In West Africa apprenticeship of this type is playing a considerable part in launching young men into a trade.[4] In Guatemala successful experiments have been made with even more limited help by using a mobile instruction team with a vehicle carrying tools; this stays only a few days in a village and helps local craftsmen and the farmers themselves.

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1. Moshi will take in-service trainees alongside its secondary technical work. (This decision is subsequent to the programme laid out in the five-year plan.)
2. *Tanganyika Five-Year Plan for Economic and Social Development* ... op. cit., Vol. II, p. 109, states that 'a number of (voluntary) agencies will be encouraged to provide properly equipped craft training centres'.
3. The TANU system of establishing one contact/leader per ten households.
4. Archibald Callaway, 'Adult Education and Problems of Youth Unemployment' in Carl G. Widstrand (ed.), *Development and Adult Education in Africa*, Uppsala, Scandinavian Institute of African Studies, 1965, pp. 39-56.

Simple commercial classes. This is a parallel suggestion, but the organization could be both cheaper and simpler, since relatively little equipment is needed and a single instructor could cover the range of skills. It could also be done part-time in the form of day or evening classes by an itinerant instructor covering five centres in a small radius, in densely populated areas. Something very much shorter than the grade C teachers' course (perhaps six months) might be enough to train instructors for this type of work. It may be asked if it would be possible that some of the grade C teacher training colleges due for closure might be suitable for training these local vocational instructors.

Social organization—young farmers' clubs, etc. Failing opportunities for immediate employment or training, youth club activity with an occupational content can be extremely valuable. The young farmers' club which has its own plot visits successful farmers, learns calf-rearing, bee-keeping etc. and has an occasional visit from a knowledgeable lecturer, can be a highly successful organization. It may be that either the Tanganyika African National Union (TANU) Youth League or voluntary organizations could do more in this line.

Re-opening of post-standard VII/VII training. Technical and financial considerations make it impossible to re-open discontinued forms of training at this level at present; but if the rural agrarian revolution begins to move faster, the sheer volume of work at a simple level may justify the training of assistants to the more expensive officers with post-School Certificate training who now increasingly man the educative services. Manpower utilization studies within the Tanzanian Government departments, including the Ministry of Agriculture, have suggested that more of the simple work could be done by less highly trained staff.

The standard IV leaver

At the end of standard IV about 32 per cent of each age group leaves school finally; and these are children of 11 or 12. Some national effort and finance have been invested in them, and quite soon they will enter the ranks of those seeking work. It may be wondered if they will have lost the literacy they gained at school. Unfortunately, if they do not read or write any more after the day they leave school, they certainly will. Since further schooling is, by definition, impossible for lack of funds, it is only through social organization that some effort can be made to keep them mentally alert and literate.

The old tribal culture assigned a definite place in society to each main age level, and a definite system of social education leading up to the passage from childhood to young adult status. As this cultural pattern weakens, a substitute is needed which prepares a child better for the modern element in a decreasingly tribal/traditional world. The scout or guide movement comes to mind for this age group—a movement which teaches its members simple skills for which a badge is given. At present in Tanzania this movement appears to be based almost wholly on the school; but it is outside school that it is most needed, by children who have lost the companionship and stimulus of the school. It is worth asking whether a very junior wing of the youth movement, or of womens' organizations, or of the scout movement might not do much to keep these children literate and learning. Some of the simple texts which the East African Literature Bureau turns out would be extremely useful for this purpose. Voluntary social work and youth leadership are badly needed to supplement an educational system which, however regretfully, has to reject so many children at the very moment when they are ready to learn so much.

In Tanzania many of the churches and affiliated organizations have a notable record in social-educational work, and they have in some cases increasing sources of support from overseas. With direct support from the government, additional funds and staff might be mobilized from abroad to keep this very large number of older children in contact with an educative influence at least until they reach an age for paid employment or productive activity. It is also possible that the Community Development Department could take a special responsibility for this group.

All the suggestions in this section would need far more careful and detailed examination between the appropriate departments and voluntary organizations. Some of them might be able to attract foreign aid, either to government or to voluntary agencies acting within government policy. All of them, however, cost money. The sheer numbers of young people leaving primary schools every year is so daunting that there is a temptation to despair of tackling their problem at all. But some methods are cheaper than others; some may be felt more appropriate than others; in some cases foreign aid and voluntary societies can relieve government of some of the financial and manpower requirements. It is surely worth while (a) to decide upon certain preferred methods, having regard to a balance between cost and effectiveness; (b) to test new methods in selected centres; (c) to expand proven successes as finance becomes available.

In all probability not one but several approaches could be tried; schemes which succeed tend to acquire a momentum and a reputation which attracts new money and effort. Only the government and the voluntary agencies are in a position to work out the detailed costings and the scale of effort which is possible from year to year. But the fact that not all can be helped is no reason for not helping some; and the experience gained now will prove increasingly valuable over the next few years as national income rises and greater investment in young people becomes possible. In the long run this problem will be solved because of the tremendous pressures which it generates. It is a question of an early, orderly and considered approach, or of a late and hasty one, probably made in emergency conditions.

7 Implications for the educative services

While the main burden of this monograph is to emphasize the present need for expansion in the agricultural and simple vocational services, in order to provide a broader economic basis for the others, there are also implications which affect the formal educational system itself, as well as other individual services.

Formal education

The basic framework of educational policy is clearly established by the Tanzanian Government and is being strictly maintained. The key decision is to restrict temporarily the growth of primary education, until the economy can generate more recurrent income. This decision provides essential control which gives room for future constructive planning. The extent of restriction must not, however, be overstressed. It is planned, if possible, to keep pace with population growth, so that at least a constant percentage enter primary. This involves opening about seventy new standard I streams per annum, and would bring primary entry up to about 160,000 per annum by the end of the plan period. Meanwhile, secondary places will be expanded to over 7,000 per annum in form 1 by 1969 and the annual enrolment in Dar es Salaam University College to 450, or slightly higher. At the same time a programme of concentrating teacher training into ten larger colleges from the existing, twenty-one upgrading grade C teachers and progressively reducing the intake of grade C trainees (possibly to zero by 1968) will be going on.

Two dangers in this situation must be noted. First, the decision to give a good quality primary education to slowly increasing numbers is a courageous one. It is bound to be strongly attacked in areas where school entry is less than 50 per cent of an age group. It will have to be carefully and constantly explained and defended.

Second, the scales of fortune are very heavily weighted in favour of the lucky 2.75 per cent who enter secondary, and especially as to training opportunities. Those who pass School Certificate (and even some of those who fail) are at present virtually guaranteed either entry to training schemes, salaried employment or (about 25 per cent) entry to form 5. For the moment a very high proportion of form 5 entrants will reach the university—the plan states that 680 will enter form 5 in 1964 and 400 will enter the university in 1966. Meanwhile the opportunities for training for standard VII/VIII leavers are being reduced. This level of entry is either disappearing or has disappeared for teacher training, agricultural training (Tengeru and Ukuriguru), community development training (form 4 is now to be the standard entry level), and most medical training. Thus there is not only a danger of the upper layer of society drawing away from the lower, but of destroying the bridges between the two. That entry-points to certain vital training systems should rise is inevitably right; but some lower forms of training and opportunity, in substitution, are needed for the primary leavers; and the later sections of this monograph have been primarily concerned with the forms these might take. It might be added that another bridge could be made by a more open career and salary structure, so that the standard VII/VIII leaver, if he performs effectively, can rise well into the ranks and salary levels of those who originally entered training from a higher level.

There appear to be three planning issues which arise for the Ministry of Education at this level of the primary age groups, issues which will become more acute as the next plan period draws nearer, and particularly if any finance for expansion becomes available.

The first is whether to devote any small additional resources which may be available to some simple vocational education in rural areas, or to use it for adding new primary streams. The reasoning which supports some vocational expenditure is the anxiety not to waste the huge investment which is represented by current standard IV and standard VII/VIII leavers, who will receive no more schooling. It may be that all this vocational work should be carried by other ministries and services (pre-farm training, national service, youth services, voluntary organizations). But the Ministry of Education has certain experiences and facilities—particularly the experience of training simple teachers and instructors, some surplus buildings (discontinued grade C teacher-training colleges), some evening classroom space, much knowledge of trade training and evening classes through its responsibility for trade schools, secondary technical schools and the technical college. It could scarcely avoid playing a large part, in wisdom and facilities, in guiding the development of post-school training.

The second issue lies in the choice betwen expanding standard I entry or adding more standards V-VII. The general policy is believed to be in favour of adding new standard I-IV streams. In the light of the general argument of the monograph, this policy should be particularly appropriate in the richer and fast-developing areas, where private enterprise may well be able to find finance for standards V-VII and where the social context will be more stimulating for standard IV leavers. However, in the poorer and more static areas there may be a case for putting more weight on standards V-VII/VIII, for three reasons: (a) there is no local money to add standards V-VII; (b) the social atmosphere is far less stimulating and relapse to illiteracy more probable; and (c) the area will especially need a share of educated local citizens, only obtainable by increasing standard VII output and therefore its share of secondary places.

The third issue is in the contribution the ministry can make to the attitude of primary leavers by the syllabus, and still more by the attitude and atmosphere, of the primary course. What is needed is well known—a primary course which gives the essential skills of literacy, but with an emphasis on the practical, illustrations from the real conditions of the rural economy, and a power to awaken the imagination of pupils as to the possibilities of a fruitful, modern life in a rural economy which has to be transformed by the application of scientific methods. Only the teachers can achieve this; it is therefore the syllabus and training in the training colleges which counts—and which may have to be watched all the more carefully because a higher proportion of teachers will be ex-secondary pupils, who are rather more divorced from village economy and attitudes than grade C predecessors.

Other educative services

An indication of the possible role of other educative services—community development, co-operatives, national service, voluntary organizations and clubs, and the agricultural extension services—has already been given. Certainly, extremely careful consideration needs to be given to the present concentration of community development on adult literacy work. Over the next five years about 600,000 children of school age will not even enter standard I of primary school, and probably nearly 400,000 will cease school after standard IV. In this situation, adult literacy programmes might seem like an attempt to fill a bath with a small tap while a much larger waste-pipe is emptying it. Two other strategies are possible. One would be to concentrate on keeping educative contact with the standard IV leavers, in whom a large investment has been made; the second would be to concentrate on the support of agricultural innovation, through which higher incomes and eventually more primary schools can be generated. Only if adult literacy were proved to be the greatest single aid to extension work—and this is not yet proved— would the present programme fit this second strategy.

In general, the Ministry of Agriculture and the Ministry of Education must be the two senior partners, the former in creating opportunity for the young manpower of Tanzania, the latter in helping them to use it: the other departments and organizations are allies and assistants to the main thrust of policy. There is ready-made machinery for co-ordination from village development committees upwards—an example is the Morogoro Regional Committee for placing school leavers, in which the regional education and regional agricultural officers play a leading part.

Wider implications

The social dangers of a situation in which 3 per cent of an age group, by virtue of getting secondary education, enter a life of high opportunity and usefulness while 97 per cent see even the opportunities of training diminish, surely need emphasis. It would seem clear that some new chance of progress must be put before the primary leaver whose predecessor, only a few years ago, could become teacher, clerk, artisan, extension worker. Some interim action to alleviate this situation—which is in the nature of a national emergency—is needed. In the longer term the answer is not in palliatives but in the creation of economic opportunity which also brings economic wealth. It is for this reason that, of the two senior partners in educative effort, agricultural extension and every service which stimulates economic growth in the rural economy must come first. Until they succeed, much of the investment in formal education will still run to waste.

8 Summary of argument

A large part both of the natural and of the human resources of Tanzania is at present only partially developed. Less than one-tenth of the labour force is in paid employment. Most of the able-bodied men and women, 95 per cent of whom live in the rural economy, are still engaged in relatively low-yielding agriculture and herding.

To increase the proportion in modernized production needs not only capital but much strengthened educative services. These include not merely formal education but all services which provide advice, technical assistance, and training in various forms to the producer. While the industrial sector will absorb an increasing but still small proportion, only a modernized rural economy is large enough to affect the great bulk of the labour force.

At present it is impossible to provide modern productive employment for more than a small fraction even of those who have completed a full primary education, still less for those who have had only four years or less. It can thus be stated that investment in formal education has outrun investment in those other educative services directly aimed at increasing production and economic opportunity. To this extent, expenditure on formal education is partially wasted.

It is therefore argued that, for the present, the highest priority is needed for services which actively foster an agrarian revolution, while the further expansion of formal primary education is temporarily restricted.

Since shortage of extension services is mainly due to shortage of recurrent revenue, with which to train and pay staff, and since revenue is short because of low productivity, the only way to break the vicious circle is to increase extension services with an absolute minimum of additional recurrent expenditure by the government. A number of methods to achieve this are suggested.

Further economies in capital and recurrent expenditure may be possible after appraisal of the results of pilot settlement schemes, thus releasing financial resources for further strengthening of extension staff.

Successful modernization of the rural economy would set in train some highly beneficial results:

1. Higher farm incomes mean higher purchasing power, leading to increased employment, in services to the farmer, in distribution of consumption goods, and in industries which can be established once there is a market for their products.
2. Higher farm output also encourages the development of processing industries for farm produce.
3. Higher output increases the yield of cesses and taxation, thus providing local and central government with additional recurrent revenue from which additional educative services can be provided.

More widespread, simple craft and commercial training is badly needed in rural areas to fit primary school leavers for this increasing range of employment in a developing rural economy. A number of suggestions are made for such a programme.

While the medium-term solution to the problem of providing more productive and acceptable employment or self-employment lies in rapid agricultural modernization, in the short-term action is needed to preserve the morale and improve the training of school leavers who cannot find worth-while employment. A number of suggestions are made, particularly concerning pre-settlement farm-training, youth service, national service and the activities of community development, co-operatives and voluntary agencies.

While the main strategy of formal educational planning is well fitted to the present situation, some question is raised concerning the discontinuation of training from a standard VIII entry-point (grade C teachers, field assistants, etc.). Since over 97 per cent of an age group do not enter secondary education, it would be unfortunate if all entry-points to training were raised beyond their reach. Addition of simpler forms of training (mentioned above) and possibly a limited continuance of post-standard VIII training for rural instructors and operators of many kinds may need to be considered.

Some consideration is given to the co-ordination of other educative services —community development, youth service, co-operative training, national service— with the two principal services of school and agricultural education. It is suggested that two main criteria should be used in considering expansion of these services: (a) they should contribute directly to raising economic output and thus to raising recurrent revenue; (b) they should help to preserve and make fruitful the existing investment in education. In particular, community development might be more concentrated on schemes directly aimed at increasing production, and on maintaining and improving the literacy and training of standard IV leavers.

Finally, the extreme importance of the agricultural extension services is restated.

Planning non-formal education in Tanzania

Jane King

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Foreword

Mark Twain's observation that 'Everyone complains about the weather, but no one does anything about it' might well be paraphrased to fit the planning of non-formal education: everyone agrees it is a good idea, but no one has done it. The reasons why are evident. The logic is clear and compelling for extending educational planning beyond the schools and universities to include such development-oriented activities as special training for farmers and industrial workers, in-service training for teachers and civil servants, and work-oriented literacy programmes such as those now sponsored by Unesco. All these, under the right circumstances, can contribute importantly both to national development and individual advancement, often more quickly, directly and cheaply than formal education. For the same reasons that formal education should be planned—to integrate it with national development needs and efforts, and to achieve the best use of scarce educational resources—non-formal education also should be planned, in correlation with formal education and within the same general framework.

But, despite these good reasons for planning non-formal education, the practical difficulties in doing so are formidable. This is what makes it an important frontier of educational planning which urgently requires attention.

Two factors stand out in explaining the special difficulties of planning non-formal education; one concerns its very nature, the other its organizational and administrative forms.

Formal education—in sharp contrast with non-formal—comprises a definable, measurable *system* of relatively standardized and interrelated parts. Non-formal education is a motley collection of relatively ill-defined, unstandardized and unrelated activities, each aimed at quite a different goal. Responsibility for the management of the formal educational system is usually concentrated in one or a few places—particularly in the ministry of education—whereas initiative, control and financial support of non-formal education is widely dispersed among many government and private agencies. (The degree of concentration or dispersal of control over formal education varies greatly by countries, but even where control is distributed under a federal system or where private education bulks large, the possibilities of achieving co-ordinated planning are usually more favourable than for non-formal education.)

It would be naïve to expect, especially in view of these complications, that comprehensive and integrated planning of non-formal education, however desirable in theory, can be created very quickly; it must develop by stages and this will take time. Thus the practical question is: how should a country begin to build this planning process and what general principles and strategy should it follow?

It was to secure a better basis for answering these questions that the Institute undertook the present case study in Tanzania—where a variety of significant activities in the realm of non-formal education had already been undertaken and where officials were eager to co-operate in any serious effort to learn how to plan them better. There was little documentation available, but with the help of several government and private agencies, Jane King of the Institute's staff, under the professional supervision of Raymond Lyons, a senior staff member, was able to make an inventory and examination of some of the most important of these activities. Her findings are presented here. The conclusions, as modest as they must necessarily be at this stage, suggest some practical steps which can be taken by any developing country—as well as some criteria that might be used—in moving towards a more coherent and productive use of educational resources outside the formal system, in the interest of national development.

Philip H. Coombs
Director, IIEP

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1 The scope of non-formal education and training in Tanzania

The main objectives of non-formal educational programmes in Tanzania are either the provision of knowledge and skills for specific purposes, or the changing of attitudes in order to open up a more positive approach towards technical change and progress.

The traditional sector, which accounts for the bulk of the working population, is served by the agricultural-extension programme and by the community-development service. The former aims at increasing the output of the peasant farmer through instruction in improved farming techniques. The latter, which operates also in urban areas, aims, in addition to its purely social objectives, at preparing the way for the introduction of modern techniques. The programme includes instruction in literacy and in basic health and organization of women's groups and self-help construction projects.

In-service training exists in both the public and private sectors. The civil service, which accounts for some 30 per cent of wage employment, has a well-developed system of in-service training spread among the various ministries, most of which have their own training schemes for their employees. In the private sector, some of the larger enterprises have courses for training skilled labour, but this practice is not general.

A limited amount of non-formal education is also provided through part-time courses. The Dar es Salaam Technical College arranges evening classes in general and technical subjects, and a private correspondence college offers various courses leading to recognized examinations. The Institute for Adult Education, based in Dar es Salaam but with branches in a few regional centres, offers courses designed to broaden the general outlook of the public. It is to be noted, however, that there are no non-formal training opportunities for the self-employed or small-scale enterprises in urban areas, aimed at providing instruction in simple techniques.

Although these different non-formal education activities are not centrally linked, there is some degree of co-ordination between programmes whose functions are related to each other. The community-development, agricultural-extension and health services are all represented in the development committees which exist at regional and district levels[1] and which offer a means of co-ordinating the activities of these services. But non-formal education is not planned in the sense of being subject to a centralized planning process relating the various programmes to each other, to available finance, and to the needs of the economy. Even where programmes operating in related fields are linked, as in the example above, they are unlikely to be planned within a joint framework. Certain planning operations are, however, carried out by individual ministries responsible for large-scale programmes. Thus the budget of the Ministry of Community Development and National Culture for the Five-Year Plan reflected assumptions about the future size of community-development staff, based on projections of employment by grade. Corresponding training requirements for the plan period were roughly calculated and the siting of district centres for training local leaders was also determined.

Because non-formal education is seen not as a whole but as a collection of separate programmes, information is not available on the total effort it represents. The few estimates given below should be considered as very approximate and as giving no more than a rough idea of the orders of magnitude involved.

The total number of people enrolled in known courses of one kind or another was estimated at 600,000 in 1965, as shown in Table 1. This figure is just under that for enrolment in primary schools. It should be noted, however, that actual attendance in literacy classes is much lower than that suggested by registration numbers. Further, the figure for non-formal education, which involves essentially part-time attendance, will be in terms of total instruction time, a figure much lower than that for primary schools.

TABLE 1. Enrolments in non-formal education[1]

Literacy classes	569 642	Civil service in-service training courses	2 010
Community development follow-up classes	16 539	Correspondence and evening courses	5 100
District and farmers' training centres	5 000	Residential adult courses (Kivukoni College)	60
Training-within-industry (TWI) courses	189	Total	598 540

[1] The total does not include enrolments in evening courses arranged by the Ministry of Education in certain regional centres, since information on these was unavailable

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[1] Tanzania is divided administratively into seventeen regions, which are subdivided into sixty districts.

There were also some 100,000 persons enrolled in women's groups, which provide basic instruction in subjects such as hygiene, nutrition, child care and household organization, but an unknown number of them are already included in the figure for literacy classes. It should be stressed that the extent of non-formal education is far wider than the enrolment figures would suggest: some three to four million people are in regular contact with community development or agricultural extension but only a small fraction is registered in the courses organized by these two services.

In 1965, some 11,000 people were involved in teaching in the different types of non-formal education, and they were distributed approximately as follows: 833 community-development officers, 1,864 agricultural-extension officers, some 8,000 teachers in literacy and follow-up (English and arithmetic) classes, and about 300 in other types of non-formal education. This figure of 11,000 may be compared with the figure of 12,000 for primary-school teachers remembering, however, that many literacy instructors are in fact school teachers. In terms of total instruction time, the non-formal teaching force represents perhaps one quarter of that of primary schools.

Information on expenditure is very scanty. Central government recurrent expenditure on community development was about £350,000 in 1964/65 and that on agricultural extension was about £900,000. Together, therefore, these two major non-formal education programmes were equal to about one-fifth of the central government's recurrent expenditure on formal education (£5,930,000) and to about 4 per cent of total central government recurrent expenditure (£32,510,000).

As already noted, community development, which includes the literacy programme, and agricultural extension are the largest components of non-formal education in Tanzania. The two services are in fact combined in the government's 'improvement approach' to agriculture, which remains not only the traditional but also the most important sector of Tanzania's economy. Agricultural extension and community development, including the literacy programme, should, therefore, be considered together.

2 The community development and agricultural extension services

The majority of the eight and a half million people engaged in peasant farming continue to live and to cultivate according to traditional customs and methods. But the government's plan aims at an annual increase of 7 per cent in the value of agricultural products marketed, not only through investment in modern farming, but largely through improvements in traditional agriculture. The improvement approach combines agricultural extension and community development with a view to progressive improvement in present methods of crop and animal husbandry, approaching the peasant farmer on both the psychological and technical planes to induce him to increase his productivity. This approach involves no major social reorganization and no large capital outlay; and since it is directed mainly at adults, it is hoped to produce quicker returns than does the formal education of children. It is not expected to bring about radical changes in the traditional sector, nor lasting solutions to the problems of land tenure and agricultural underemployment. It is the settlement schemes of a different programme, the 'transformation approach', which are intended to offer a more fundamental means of rural change. The great obstacle here is that the very heavy financial outlay involved makes their immediate introduction on any large scale impossible.

But if community development and agricultural extension are clearly related in the context of a single policy approach designed to increase output in the rural sector, the means of carrying out such a policy are by no means clearly specified. There is no programme indicating the precise measures to be taken for achieving co-ordinated action. The link between concrete objectives and policy principles still remains to be forged.

Community development

Community development originated as an effort of the colonial government in social welfare—the readaptation of World War II veterans to local conditions. Soon, however, the concept of development began to gain ground, and in 1950 the department of social welfare was replaced by the department of social development under the Ministry of Local Government. Consequently, new elements were introduced into the programme, which was at first concentrated in a few selected areas. These elements included literacy and youth schemes, home-craft, and self-help projects directed towards land preservation and road building. The programme gradually spread to other areas, but it was not a consolidated programme; the general line of action was to pursue the activities which received the greatest popular support. Around 1960, however, schemes were launched for increased productivity, with community development becoming more closely associated with agriculture.

Another important factor which contributed to the evolution of the community-development programme was the development of political awareness in the population during the 1950s and the formation of the Tanganyika African National Union (TANU) in 1954. Essentially in opposition to colonial rule, TANU, under the colonial government, nevertheless supported some of the schemes such as rural development and the literacy campaign which were then introduced. With the achievement of independence in 1961, the programme was consolidated in its present form under the Ministry of Community Development and National Culture.

Community development has both a local objective—the improvement of social and economic conditions in individual communities—and a national objective—the raising of total agricultural output in preparing the way for the introduction of knowledge and new methods. It operates principally in rural areas, which account for 96 per cent of the population, but also in urban centres.

The conditions in which community development functions vary within a wide range in Tanzania. At one end of the scale are the densely populated productive areas where cash crops are cultivated and where marketing co-operatives and relatively developed distributive services are available; at the other end are the sparsely populated nomadic pastoral areas, and regions of subsistence cultivation where lack of transport is an obstacle to community-development work, especially in view of the tendency for family units in Tanzania to be scattered rather than concentrated in villages. But the principle guiding the community-development programme is in any of these conditions to help individual communities to identify their needs and to provide solutions for them.

The means selected for putting this principle into practice are many and varied. One of them is the spread of literacy, an integral part of community-development work. Because of its importance, the literacy programme will be dealt with separately in the next section of this chapter. Another means is the organization of women's groups, already mentioned, which provide education in basic health and in household organization, domestic farming and other subjects. Usually female workers are in charge of these groups.

One of the most important functions of community development is the training of local leaders, who in passing on the knowledge they acquire to other members of their communities are intended to create a multiplier effect. It is for this purpose that the construction of district training centres has been provided for in the five-year plan. These centres, of which two are already functioning, may provide courses for individuals in particular skills or train groups such as village development committees,[1] village executive officers, members of district councils and women's groups. Each centre is to be in charge of a senior community-development assistant aided by a woman community-development assistant. Running costs, provided largely by district councils, are low since there are no regular instructors, teaching being provided mainly by local departmental staff. Apart from training, community development staff has also the function of assisting village development committees. These committees enjoy great authority. Headed by a local TANU leader they carry with them the authority of the party. Further they are considered to have derived their existence from traditional laws and customs valued by the people, and have the power to punish by traditional means which can go as far as the confiscation of cattle of people refusing to assist in self-help schemes. Because of the traditional respect for age, the members of the committee often have more influence in putting over ideas than community-development workers, who are generally much younger. For this reason the training of village development committees is emphasized.

Community-development officers may themselves demonstrate simple agricultural techniques or health practices; where more specialized knowledge is needed, the local agricultural, medical or co-operative officers may be called in. Community development has thus a function of liaison with these services as well as with local government, voluntary agencies, and other organizations. It is also associated with the 'people's education plan', which starts with literacy and continues with follow-up classes leading to the summit—Kivukoni College, which offers residential courses in economic, social and political subjects to persons likely to be influential in their own community. A second similar college is now under construction.

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[1] The village development committee, which is an informal continuation at the village level of the development committees at regional and district levels, is composed of about twelve locally elected members. It is intended to provide a means of linking individual communities to the process of national development. It usually covers about 1,000 to 1,500 people, depending on the density of the population in the locality, and is not, strictly speaking, confined to villages, since homesteads in Tanzania are usually scattered.

Responsibility for determining programmes of action is concentrated in the hands of regional officers. It is primarily at this level that matters are decided such as the emphasis to be given to different forms of activity and the size of the areas to be covered by available staff within districts.[1] Such devolution of authority has the advantage of leaving initiative to those who are best placed to assess regional needs; on the other hand, it means that the regional programme is dependent on the ability and qualifications of the individual officer who receives little guidance from the centre, and it has been noted that certain schemes are initiated without due consideration to follow-up. An example is the formation of literacy classes without sufficient effort being made to ensure the consolidation of the knowledge that these impart, whereby there is a likelihood of relapse into illiteracy. Also, certain women's groups limit their activity to sewing and knitting without subsequently including subjects of more direct utility. Sewing and knitting are popular because they result in finished articles. It is easier to introduce them than, say, to persuade people to include eggs or green vegetables in their diet when there is traditional prejudice against this.

There is also the question of concentrating the effort of the staff. When officers are more or less evenly distributed within districts, their impact is likely to be limited. By contrast, the impact was much greater in some districts when staff were concentrated in particular localities intended to form nuclei from which influence could spread outwards. Here it was realized that even when full-time attendance of officers was no longer required, a regular though less frequent assistance on their part would still be necessary. It is not always easy to determine the point at which communities can continue to carry on without the full-time assistance of officers; it may take longer than expected for new practices to become established; thus in one particular campaign for improved child nutrition, mothers reverted to their original habits even when there had been an obvious improvement in child health for some months.

Nor does the fact that senior officers are frequently transferred simplify their task. Sometimes they hardly have the time to acquaint themselves with the particular problems of the locality before being posted elsewhere. Measures are, however, being taken to remedy this situation.

In spite of these difficulties, several individual projects have been extremely successful. Specific health campaigns directed against malnutrition and bilharziasis have given very good results. The cotton-improvement project in the old Eastern province was also very successful; when attempts of an agricultural extension team had failed to arouse the interest of the local population, community-development techniques were introduced, combining training of farmers with literacy

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1. Central allocation of staff is direct to district level. Local authorities may also hire additional community-development workers.

teaching, discussions, meetings and visits to other successful cotton-growing areas. The scheme was supported by specially prepared films and posters. Two years later, the cotton yield had increased by 37 per cent. This experience might suggest that community development can have a strong impact when included in a wider programme which has a specific purpose, in this case agricultural improvement. Both local farmers and staff participating in the scheme were motivated not by a vague idea of development, but by clearly defined tasks to be achieved. It might be tempting to conclude that the concentration of community-development resources in ways such as this is more profitable than the widespread introduction of activities not directly linked to specific development measures.

The size of the community-development programme, within the five-year-plan period, in terms of finance and staffing is shown in Table 2 and Table 3.

Table 2. Central government expenditure on community development (in £ thousand)

	1964/65	1965/66	1966/67	1967/68	1968/69	Total
Recurrent expenditure	387	476	575	633	680	2 751
Capital expenditure[1]	191	135	94	90	77	587
Total	578	611	669	723	757	3 338

NOTE
1. Not including self-help construction materials

SOURCE
Ministry of Community Development and National Culture

The significance attached by the government to the programme is shown by the total allocation of recurrent expenditure which, for the five-year period was equivalent to 7.7 per cent of central government recurrent expenditure on education (21 per cent of central government recurrent expenditure on primary education), 20 per cent of central government recurrent expenditure on health, and 1.5 per cent of total central government recurrent expenditure. However, the community-development effort cannot be measured in these terms alone, since important contributions are made by voluntary agencies, literacy teachers and others in the form of services; many of the 7,500 literacy teachers in 1965 received no remuneration for their work, others received payment in kind, or in money raised by their classes.

As can be seen from Table 2, recurrent expenditure is to rise by 75 per cent over the plan period, but a proportion of this increase (which is not specified) is due to the proposed transfer of local staff to the government pay-roll. The extent to which funds will be available will largely depend on the extent of external assistance. The latter provided nearly one-third of recorded expenditure for community development in 1963-64, and is expected to finance, in particular, the construction of district training centres. However, in 1965 no domestic funds were allocated for this purpose, as against a planned figure of £62,500.

The staffing of the community development programme is shown in Table 3.

TABLE 3. Present and planned employment in the community-development programme

	1965	1969
Government field staff	302	1 101
Local authority field staff	531	—[1]
Headquarters Dar es Salaam	21	53
Staff training colleges	9	14
Others	19	—
Total	882	1 168

1. Local authority field staff to be transferred to the central government

The total number of community-development staff now employed, which amounts to 8 per cent of primary-school teachers, gives a coverage of one officer for 12,500 people, a ratio which should rise to 1:10,000 by 1969. A target of adequate coverage was set for 1969 by the ministerial draft plan of one male and one female community-development assistant[1] for every ten village-development committees. A village-development committee covers between 1,000 and 1,500 people. It was calculated that 1,560 assistants would be required on this basis. This is an approximate figure because the number of existing committees could only be estimated and also because no allowance was made for their increase. As against 1,560 assistants required, only 784 were employed in 1965, and owing to lack of finance only 906 will be available in 1969.

As already noted, the organization of community development is characterized by a large degree of decentralization, with responsibility devolving on the regional officers. Central planning is limited to estimates of requirements in terms of staffing and material facilities, which are reflected in the ministerial budget for the plan. The proportion of total government resources allocated to community development was determined by such considerations as the contribution the service is expected to make to social development and to increase in agricultural output, and also the political importance attached to the programme. There are no precise estimates of expected returns; no means as yet exist for measuring the contribution which community development can make to increasing output or improving the standard of living of the population. When the plan was being prepared, community-development officers were asked to assist regional commissioners and agricultural officers in formulating agricultural-development proposals, and in this connexion to suggest means of accelerating progress through the application of community-development methods and to give estimates for capital and recurrent expenditure of their own programmes. It is not known, however, to what extent such suggestions and estimates were taken into consideration by the ministry.

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[1] The 'assistant' grade provides the basic category of field workers. Estimates in this paragraph refer to field staff other than administrative, technical and district training-centre staff.

Requirements for field staff were estimated on the basis of what was considered an adequate coverage, as described above. Estimates of supervisory, training and technical staff took into account posts to be created in connexion with the construction of new district training centres. A rise in the qualifications required for certain senior posts was also provided for over the five-year period; this applies in particular to regional and district officers in charge. Details of training needs were established after the publication of the plan. Previously there was no direct relationship between the size of training facilities and the anticipated number of entrants into the service. Under the new system, however, all new recruits will go through both an induction and a basic course in community-development methods. The training schedule for 1966 to 1969 gives priority to field assistants already employed, but who have not had any training, and to new recruits. After 1969, when all these will have been trained, refresher, upgrading and skill courses will be introduced as a regular feature.

The largest item under the heading of material facilities is the district training centres, which account for 50 per cent of planned capital expenditure on community development, excluding self-help materials. Five of these centres were functioning in 1965, and the goal is to provide one for each of the sixty districts. It is expected that by 1969 all but thirteen districts will have been provided with these centres—if foreign assistance is forthcoming. If this target were achieved, 25,000 people would pass each year through courses of one kind or another. A further 14 per cent of capital expenditure is allocated to community centres for towns. It is intended that such centres should ultimately be available in all urban centres, although this will not be possible within the plan period.

Following the publication of the plan, five-year programmes were prepared for regions by the officers in charge, on the basis of the general objectives of community development. The same appears to have been done by district. But these programmes rarely go beyond an enunciation of principles or methods; in fact, it is the annual programmes, elaborated from the five-year programmes when these are explicit enough for the purpose, which are the most important in determining the practical course of action. These annual programmes are established on a regional basis by combining the work plans of the individual districts. But not many of them are very explicit about how decisions are to be implemented.

Training for entrants to the service consists of a two-month induction course, followed by a two-month interval of practical experience, and a six-month basic course. The educational qualifications required are two years of secondary school for government-employed assistants and rather less for locally employed assistants who are now being gradually transferred to the government service as a newly created junior category. In one of the recent courses, students ranged in educational standards from completed-first-four-years of primary school to completed-first-two-years of secondary school. The policy of recruiting from the lower educational levels seems to be a wise one. No highly technical training is required for this work, which relies strongly on a capacity to appreciate local circumstances. There is no apparent reason why some among the expanding group of primary leavers should not profitably be absorbed by the community-development service. The content of the basic course includes the elements of government and local administration, the function of community development in implementing district plans, methods of approach to people, and organization of work. Lectures are given by outside specialists on certain technical subjects such as agriculture, health, and the use of audio-visual aids. Women assistants are instructed in such subjects as home management and nutrition prevention of diseases. If the basic course is eventually lengthened, it might be advisable to provide more practical instruction in agriculture, since the work of the community-development officer is primarily in communities which depend on agriculture for their livelihood, and where in general there is less agricultural extension. The location of one of the agricultural colleges on the same site as the community-development college provides an ideal opportunity for co-operation in teaching, one that has not yet been exploited.

It now remains to examine the literacy programme, which, as noticed earlier, is in fact one of the main components of the community development programme.

The literacy programme

The literacy programme, which enjoys great popularity, is seen as the basis of adult education and as a means of accelerating progress: 'To ensure that programme development in the rural section is achieved and maintained by the people, it is essential that adults are educated. The importance of adult education in promoting economic and social development is unquestionable.'[1] The statement is unexceptionable, but there has been no attempt to define more precisely the mechanism by which the ability to read and write can contribute to economic progress, nor has any particular effort been made to introduce literacy where it might be expected to have the greatest impact on development.

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[1] *Literacy and Adult Education Programmes in Tanzania*, Dar es Salaam, Ministry of Community Development and National Culture, undated.

One of the main difficulties encountered by the literacy programme is supply of teachers. The problem is not only to find them, but to provide sufficient incentive for them to continue teaching for any but short periods. Any person may be recruited who can read and write at least reasonably proficiently. Frequently school teachers are selected. In some districts children from primary or secondary schools teach during their holidays. A difficulty here is to ensure that classes continue when they return to school. Statistics on teachers are not kept. It is therefore impossible to give even a rough idea of the occupational structure of the literacy-teaching force or of the retention rate of teachers, which is largely dependent on the compensation they receive for their services. Some are willing to teach voluntarily from a sense of social obligation or, sometimes, because of the prestige attached to the position. Others receive contributions from their classes in money or in kind. In urban areas, there are usually fixed class fees. In general, however, it is found that regular payment is necessary to ensure continuity of teaching. For this reason, a sum of £110,250 has been allocated over the plan period, but so far none of these funds appear to have been released.

Training of literacy teachers is not organized on a national basis, although it may be by community-development officers in the form of short courses. These could well be advantages in a more systematic training scheme providing instruction not only in pedagogical methods, but also in the progressive introduction to classes of subjects relevant to local development problems.

Tanzania enjoys the great advantage in literacy teaching of having a national language, Swahili, which means that the problem does not arise of having to choose between English and a variety of vernaculars, as is often the case in other African countries. A single basic literacy reader with wide circulation is generally in use, but the supply of specially prepared follow-up readers graduated in difficulty and containing practical information is limited. A number of periodicals, however, provide reading material and unsold copies of an agricultural magazine are offered with literacy certificates. Agricultural and other instructional pamphlets and posters are fairly widely distributed.

Enrolment in literacy classes is high; it rose from 132,000 in 1961 to 250,000 in 1963, 314,000 in 1964 and 570,000 in 1965, and now represents about 11 per cent of the adult illiterate population. In view of this rapid rise and the fact that basic literacy in Swahili can be achieved through part-time classes in about six months, it should theoretically be possible to eliminate illiteracy in Tanzania within five to eight years; in fact, there is no indication of a corresponding decline in illiteracy rates, which were estimated at 86 per cent for men and 95 per cent for women in 1965.[1] Two main reasons account for this situation.

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[1] *Statistics of Illiteracy*, World Conference of Ministers of Education on the Eradication of Illiteracy, Paris, Unesco, 1965.

In the first place, attendance rates are significantly lower than registration figures. As shown in Table 4, the rates of average attendance in the seven districts for which information was available vary from 11 to 79 per cent. Unfortunately these districts do not provide a large enough sample to indicate any clear relationship between attendance and type of area, but if the figures obtained are any guide, higher rates certainly do not correspond to the most prosperous economic regions. Arusha, a fertile coffee-producing region, exhibits one of the lowest rates, though it seems to have risen recently. Mwanza, a relatively prosperous cotton-growing area, also records a low figure. On the other hand, Sumbawanga, which is among the poorest districts, has the highest attendance rate. The reason for this may be that it is one of the few districts with villages rather than scattered homesteads. The highest attendance rates in fact appear to be in towns, where the incentive to learn is probably connected with the greater opportunities for making use of literacy. In some settlement schemes, where farmers organize literacy classes of their own accord, the incentive is provided by the need to read instructions, write records, and so forth.

TABLE 4. Enrolment and attendance in literacy classes in selected districts

District	Date		Total enrolment	Average attendance	Average attendance (%)
	Year	Month			
Sumbawanga	1965	February	833	580	70
		March	1 604	1 267	79
		May	2 001	1 556	78
Mbeya	1964	March	14 043	3 851	27
		April	14 043	3 851	27
		June	11 552	4 264	37
		July	11 773	4 444	38
Arusha	1964	April	970	205	21
		October	1 071	160	15
		December	1 141	122	11
	1965	April	2 490	1 499	60
Mwanza	1965	April	9 289	1 148	12
Pare	1964	May	1 808	238	13
		June	1 716	473	28
Mbulu	1965	April	15 930	2 144	13
Masai	1965	April	767	180	23

Several reasons may account for low attendance rates. One is undoubtedly the difficulty of retaining teachers for any length of time, and the consequent lack of continuity, which has a dampening effect on the initial enthusiasm of pupils. Another is low quality of teaching. Yet another cause may lie in the fact that people cannot always free themselves from work, particularly during intensive cultivation periods. Lastly, pupils are not always able to buy the basic reader. In almost every class visited, people were sharing readers; in 1964 some 75,000 copies were sold against an enrolment of 314,000, though it is likely that a certain number of copies were handed down from class to class.

A second reason why the elimination of illiteracy is proving a relatively slow process may lie in the fact that not all those attending classes do achieve literacy, at least to the extent of being able to put it to practical use. Certificates of literacy are awarded on the basis of a test, but the test is not standardized and may even be conducted by the teacher himself. Consequently, some of those who receive certificates are not sufficiently prepared to make use, for example, of the instructional handouts of the Ministry of Agriculture.

Here it may be noted that emphasis has been on the widest possible spread of literacy rather than on consolidating the knowledge of new literates. In some particularly successful classes, further practice in reading is combined with education in subjects such as health and agriculture, but this is the exception rather than the rule. The number of people enrolled in follow-up groups represents only 3 per cent of those registered in literacy classes. These groups, however, which provide instruction in arithmetic and English cannot be considered as a follow-up activity in the sense of providing further practice in reading and writing.

The Government is at present beginning to feel the need for a more selective approach linked to the national development programme. There have already been examples in Tanzania of effective application of literacy to increased production. One of these is the cotton-improvement project in the old Eastern province, mentioned above. It would seem from this and other similar examples that the literacy programme can be expected to produce the best results, in terms of economic returns, if resources are concentrated on specific schemes or areas where there exist both the interest to learn and the opportunity to use literacy for concrete ends of economic significance.

Agricultural extension

The agricultural service is responsible for encouraging the application of techniques for improving methods of cultivation and animal husbandry. It aims to increase the use of fertilizers, insecticides, manure, draught animals, equipment, and improved methods of cultivation and harvesting; it can also encourage the introduction of new crops. Originally the function of agricultural extension was regulative; officers were responsible for ensuring that certain obligatory measures such as sheep-dipping were being carried out. The present approach is primarily persuasive and great importance is attached to the attitudes and reactions of farmers.

The service extends to the whole country but coverage varies widely, from 0.9 to 3.6 extension workers per 10,000 population. Within regions the staff is usually concentrated in the most important crop-producing areas. In Arusha, for instance, the great majority of extension officers are located in the productive Mount Meru area.

As already noted, the approach is persuasive, the officer acting chiefly through advice and demonstrations to farmers on their own holdings. Some instruction is also being given through farmers' training centres which have proved successful and are now being expanded. These centres are intended for practising farmers and, in general contrast with pre-employment agricultural training schemes for youth, have a negligible rate of wastage. Each course concentrates on one particular subject and lasts from one to two weeks. Farmers are accompanied to the courses by their extension worker so as to make follow-up more effective.

Though the agricultural-extension services are not intended to bring about any radical changes in the established system of farming, they have initiated some schemes which may offer the beginnings of a new approach to rural development. A particularly interesting example is that of the so-called 'villagization' schemes. In one such project, a group of farming families in a sparsely populated area joined together and with the help of a small loan from the local authorities built themselves a village and began to cultivate collectively. In a country where scattered family units rather than villages are the rule, 'villagization' offers the great advantage of facilitating the introduction of communal services; concentrations of families require a proportionally smaller number of extension workers for effective coverage than scattered homesteads. Furthermore, schemes of the type described can be organized on the basis of self-help, with perhaps a small loan at the initial stage, and do not involve large financial outlay.

Another project which is intended to provide some solution of the problem of unemployment among rural primary-school leavers, is at present under consideration; village elders in different areas would be encouraged to allocate land for the exclusive use of local children who had finished primary school and who would be given special instruction in new farming techniques by extension workers with specific responsibility for such schemes. It is hoped that such an incentive would both provide training for young people who would later set up on their own, and set a general example of the advantages of modern cultivation methods.

Recurrent expenditure on agricultural extension can be estimated roughly at £900,000 for 1965, i.e., under 3 per cent of total government recurrent expenditure, and as much as one-third of the recurrent budget of the Ministry of

Agriculture, Forests and Wildlife. Employment in the different categories of field staff is shown in Table 5.

TABLE 5. Employment in the agricultural-extension service

Category of employment	1965	1969
Field officers	110	150
Assistant field officers	785	1 130
Field assistants	969	824
Total	1 864	2 104

Total extension field staff amounted to 1,864 in 1965 and gave a coverage of about one officer per 5,000 rural population. There is no official estimate of the planned increase in the number of extension field workers by 1969, but the total number of field officers, assistant field officers and field assistants under the Ministry of Agriculture, including those engaged in other services and in research, is to increase by some 15 per cent during the plan period. Assuming that the proportion of extension field workers within this total remains the same, the number of officers should reach 2,100 by 1969. The relatively small total increase of 15 per cent is due to the fact that field assistants, forming a sub-technical category, are no longer being recruited and will gradually diminish in number. Field officers (diploma level) and assistant field officers (certificate level), representing half of the total extension field staff, will together increase by almost 50 per cent, but owing to the decrease in the number of field assistants there will be only a relatively small increase in the total extension staff, though its average level of training will be higher. The target coverage figure is one extension worker per 1,000 farming families as against the present figure of one officer per 2,500 families (excluding the field assistants), but it will not be reached by the end of the plan period. This target is not intended to represent a saturation-point. According to Guy Hunter international estimates for average coverage range around a figure of one officer per 500 families.[1] Several experts in Tanzania have estimated the needs in areas of intensive development at one per 300.

The responsibility for agricultural extension lies with the agricultural division of the Ministry of Agriculture, Forests and Wildlife, except for training, which is under another division. A manpower utilization report prepared by the central establishment division of the President's Office has proposed that the work of the agricultural division should be distributed between two sections, one of which would be in charge of agricultural extension.[1] At present there is no section exclusively concerned with this service. At field level, the division is represented by regional and district officers.

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[1] Guy Hunter, *Manpower, Employment and Education in the Rural Economy of Tanzania*, (pp. 83-118 of this volume).

As in the case of community development, central planning is limited to estimates of requirements in terms of staffing and material facilities. The supply of staff is restricted by output from the training colleges as much as by purely financial considerations. As can be seen from Table 6, shortfalls are expected in both categories of professional field staff.

TABLE 6. Estimated output of field officers and assistant field officers from training colleges

	Estimated supply from training colleges						Requirements over plan period[1]	Shortfall
	1964	1965	1966	1967	1968	Total		
Field officers								
Agricultural college, Morogoro	—	—	—	50	60	110		
Other agricultural colleges abroad	32	28	16	57	20	153		
Total	32	28	16	107	80	263[2]	340	77
Assistant field officers								
Ministry of Agriculture Training College, Ukiriguru	14	30	58	27	55	184		
Ministry of Agriculture Training College, Tengeru	90	63	126	139	153	571		
Total	104	93	184	166	208	755	900	145

1. See *Survey of the High-Level Manpower Requirements and Resources for the Five-Year Development Plan, 1964/65–1968/69*, Dar es Salaam, Manpower Planning Unit, Directorate of Development and Planning, December 1964
2. A few additional officers may also be obtained from universities

Field officers (diploma level) have until now been trained abroad, but in 1967 the first batch of students will complete the two-year course at the Morogoro Agricultural College and a total of 263 students, including those from institutions abroad, are expected to graduate over the plan period. As the requirements total 340, the shortfall would amount to seventy-seven. It might be possible to reduce this to forty by calling in expatriates, but recently there have been difficulties in obtaining their services.

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[1] John B. Seal, Jr., *Manpower Utilization Report on the Agricultural Division, Ministry of Agriculture, Forests and Wildlife*, Dar es Salaam, Central Establishment Division, December 1964.

Assistant field officers (certificate level) are trained almost entirely within the country. With output estimated at 755 as against 900 required, the gap would amount to 145. However, the recent decision to reduce the length of the course from three to two years may provide up to 150 additional officers by 1968.

Field assistants are no longer being recruited and the category is gradually disappearing. They are therefore not included in output estimates.

The main difficulty in the recruitment of staff lies in the fact that agriculture rates low in the choice of careers. The two certificate-level colleges have between them accommodation for 640 students, but places are not filled. The supply of school leavers with school certificate is now sufficient; what is lacking is the willingness to embark on a career in agriculture. Even those who complete the course may be drawn off into alternative employment if the opportunity presents itself. The increase in output expected from the reduction in the length of training from three to two years depends largely on the success in recruiting additional students.

There are various possibilities of alleviating the shortage of extension officers. One of them is the accelerated training in specific agricultural techniques of people with low educational qualifications. This can provide in a relatively short time large numbers of people capable of providing limited instruction. But such people have insufficient basic knowledge to satisfy longer-term needs, and in addition they require a corresponding number of supervisory staff which may be difficult to obtain. Tanzania does not favour such a policy, as is shown by the abolition of the field-assistant category.

Another possibility is better utilization of the assistant field officers, especially now that the field assistants, the largest single group of extension officers, are disappearing. The manpower utilization report on the agricultural division proposed such measures as the revision of work assignments with a view to using to the best advantage the abilities of assistant field officers, systematic practical guidance of newly appointed officers by senior staff, and greater emphasis on using assistant field officers tasks ideally performed by field officers.

Yet a further possibility is that of in-service training, provided by the agricultural colleges; but there are no arrangements for upgrading field assistants, who represent 50 per cent of the present extension staff. The colleges offer very little in the way of refresher courses, though these are sometimes organized informally by regional offices and are now beginning to be introduced in farmers' training centres. Already six farmers' training centres are functioning and twenty additional centres are scheduled for 1969 so that each of the seventeen regions should have at least one, the remaining centres being located in areas of intensive cultivation. As a centre can train some 600 farmers a year, it should be possible to train annually 15,600 farmers by 1969. But this figure represents at most 1 per cent of the farming community. It should be added that until now these centres have been financed from outside sources, so that the achievement of the target depends on the availability of foreign aid. By 1965, funds had been allocated for seven of the twenty additional centres to be built.

The need for co-ordination

The need for co-ordination between community development and agricultural extension is stressed throughout the five-year-plan; little has been done to meet it. There is no plan determining the proper regional distribution of the staff of these two services and a precise line of action to be followed with regard to each of them; nor is there a body specifically responsible for co-ordinating the respective activities within a centrally integrated programme. It is only at the local levels that some measure of co-ordination is ensured by the regional and district development committees.

The distribution of field staff by region, as shown in Table 7, does not indicate very clearly the principles according to which staff is allocated. Coverage varies within wide limits between 0.9 and 3.6 officers per 10,000 population in the case of agricultural extension, and between 0.4 to 1.3 per 10,000 in the case of com-

TABLE 7. Distribution of community development and agricultural extension staff by region, 1965

Region	Population estimate	Community development staff			Agricultural extension staff	Number of staff per 10,000 population	
		Central government	Local authority	Total		Community development	Agricultural extension
Arusha	471 000	14	33	47	90	1.0	1.9
Coast	621 000	34	17	51	91	0.8	1.5
Dodoma	595 000	19	45	64	97	1.1	1.6
Iringa	566 000	19	30	49	120	0.9	2.1
Kigoma	327 000	12	14	26	77	0.8	2.4
Kilimanjaro	548 000	13	36	49	199	0.9	3.6
Mara	402 000	10	23	33	94	0.8	2.3
Mbeya	625 000	20	45	65	108	1.0	1.7
Morogoro	633 000	15	49	64	103	1.0	1.6
Mtwara	864 000	23	50	73	78	0.8	0.9
Mwanza	967 000	24	40	64	19[illegible]	0.7	2.0
Ruvuma	309 000	15	10	25	56	0.8	2.1
Shinyanga	763 000	17	37	54	111	0.7	1.5
Singida	431 000	16	42	58	73	1.3	1.7
Tabora	656 000	9	14	23	116	0.4	1.8
Tanga	670 000	29	26	55	139	0.8	2.1
West Lake	595 000	13	20	33	111	0.6	1.9
Total	(10 043 000)	302	531	833	1 864		

munity development. It would appear, however, that while the agriculturally productive regions have a relatively high proportion of agricultural-extension officers, the under-developed regions have a relatively high proportion of community-development officers. Kilimanjaro, rich in coffee, and Tanga, rich in sisal, have, for example, a higher density of agricultural-extension staff and an average density of community-development staff, while the dry central regions of Dodoma and Singida have a higher density of community-development staff and a relatively low density of agricultural-extension staff. This tendency corresponds to the policy of concentrating agricultural extension work on productive and more progressive areas, and community-development work on poorer and less receptive areas. However, the data in Table 7 must be treated with some caution; Arusha, for instance, combines in a single region the prosperous coffee-growing Mount Meru area and the undeveloped nomadic Masai district.

At the central level, some point of contact between the two programmes is provided through the standing meetings of the principal secretaries of different ministries, but these are concerned with *ad hoc* questions rather than problems of co-ordination or integration. At the local level, the departmental officers responsible for community development, agricultural extension and health are represented on the regional and district development committees. These committees are responsible for co-ordinating the programmes of different services and ensuring the integration of district programmes within regional programmes. There are also the district standing health committees, introduced in 1964 and responsible in particular for health education at the village level.

However, judging from the cases observed, no joint work programmes are prepared in advance by these services; co-ordinating links tend to be established only when activities happen to coincide. Co-operation between community development and the health services seems to be effective, possibly because there is little danger of their respective functions overlapping one another. Health officers are considerably less in number than community-development workers and their duties are other than purely educational. Community development is necessary for the conveyance on any large scale of the principles of hygiene and nutrition. Co-ordination between community development and agricultural extension appears to be less efficient, one possible reason being that the demarcation line between the two is not straight all the way through. There is nothing to prevent agricultural extension making use of community-development approaches; put-over methods are in fact included in the course for assistant field officers. It may even be the agricultural-extension worker who encourages the setting up of literacy groups without referring to community development services.

It has been seen that agricultural extension and community development are combined in the Government's improvement approach to agriculture. It was noted that agricultural extension is generally concentrated on the more productive areas and that there is a tendency to place community development rather in the poorer, less receptive areas. In the absence of any definite policy statement it could be concluded that community development is considered in this way a preliminary stage, later to be followed by intensified agricultural improvement. An alternative interpretation, which may be more realistic, is that community development is regarded principally as a general educational activity and a means for improving individual living conditions, but that it is not, at least in present circumstances, always deliberately related to economic objectives.

3 In-service training in the private sector and in the civil service

The private sector

Of the 350,000 people engaged in wage employment in 1964, some 70 per cent were working in the private sector. Yet few private enterprises organize in-service schemes for training their employees: of the establishments visited in connexion with the manpower survey, less than ten had any such schemes.[1] The great majority of skilled craft workers acquire their knowledge on the job, without any formal instruction. This practice may fit workers for specific tasks within an individual concern but it tends to be a narrow type of training with little or no theoretical background. It cannot therefore be considered as a means of meeting over-all national requirements.

A limited amount of non-formal training is arranged outside establishments. The training-within-industry section of the Ministry of Labour organizes courses in job relations, job methods and job instruction, through which 189 people passed in 1964. Large-scale employers sometimes send people to courses organized jointly with other East African branches of their firms. There are also informal arrangements for workers who wish to learn through correspondence or through evening classes, by allowing them time for study or by paying their fees, usually by making refunds to successful candidates. In addition a few firms participate in sandwich courses organized by the Dar es Salaam Technical College. On the whole, however, employers have been reluctant to support schemes in outside training institutions, particularly for workers in the lower skill ranges, because of the fear of their employees being attracted away to other jobs and not remaining long enough with the firm to justify the cost involved.

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[1] *Survey of the High-Level Manpower Requirements and Resources for the Five-Year Development Plan, 1964/65–1968/69*, op. cit. This survey covered all central government and all non-agricultural para-statal and private enterprises with 100 or more employees. It accounted for over 70 per cent of non-agricultural workers employed on the Tanzania mainland.

At present, the supply of skilled craft workers through formal education is limited to the City and Guilds courses of the Dar es Salaam Technical College, which had an enrolment of about 130 in 1965. The two trade schools which previously offered a three-year post-primary course were found no longer to be meeting demands adequately, in addition to involving high per-pupil costs. One of them has been converted into a secondary technical school and the other is being similarly reorganized. Employers have therefore had to find their own ways of meeting skilled labour needs, but this has generally been not by organized training but by letting their employees acquire these skills simply by association with the job. The manpower survey identifies a total requirement of 5,045 skilled manual workers of journeyman level and above for the plan period, as against a known supply (from formal in-plant training courses and apprenticeships and the Dar es Salaam Technical College City and Guilds courses) of 623. This leaves a gap of over 4,400, which does not include skills that can only be learned practically on the job. This does not mean that 4,400 jobs will remain unfilled; employers have managed until now to fill posts with persons who have acquired their skills on the job with varying degrees of efficiency, and they will probably do so in the future. But training needs are likely to be affected by two important factors; one is the acceleration of the localization programme, which will require increasing numbers of citizens from among the educational system's expanding supply to be trained up for the higher skilled craft posts at present occupied by expatriates. The other is the provision for industrial expansion in the five-year plan that will require a more diversified and thorough type of training than previously. The manpower survey indicates that 'if employers are to make this transition successfully, it will be incumbent upon them to make plans now for training this oncoming educationally well-prepared supply in the "modern crafts"'. In fact, the difficulty is not merely one of numbers: the problem is to provide higher-quality training which cannot be given purely through association with the job.

While formal training should not be neglected, a more immediate solution to this problem is to place responsibility for training on the enterprises themselves. In fact, a scheme of this kind is now being considered by the Government. It would be based on a pay-roll tax to finance it, whereby firms running the scheme for their own labour needs would be exempted from the tax, while those training additional numbers for other establishments would receive a subsidy. At the beginning, recruitment would be from among primary-school leavers, later extending to secondary-school leavers as these became more readily available. Curricula and testing would be uniform throughout the country.[1] The introduction of such a scheme in the present circumstances would no doubt raise some difficult problems, not the least of which would be the reluctance of many employers to use any but their own methods, which would make it difficult to apply uniform curricula and testing methods.

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[1] For a fuller treatment of this problem, see J. B. Knight, *The Costing and Financing of Educational Development in Tanzania*, in vol. II of this series, Paris, Unesco/IIEP, 1969.

Another method of training, little exploited in Tanzania, consists in part-time courses provided by formal institutions and aimed at complementing skills acquired on the job with theoretical courses. The Dar es Salaam Technical College runs a successful four-year technicians' sandwich course for the employees of a large mine, six months' training at the college being alternated with six months' work at the mine. The college has also a day-release course for telecommunications technicians. Day-release and sandwich courses may be an even more effective means of training than full-time courses, and their expansion is now being contemplated.

But if organized in-service training in the private sector is still at the beginning stages, it is much more fully developed in the public sector—the civil service.

The civil service

The civil service is well organized to provide in-service training. Government services have all along been given priority for supplies of trained manpower from the formal educational system and it is now becoming increasingly possible to recruit at adequate educational levels. Personnel already employed, however, often lack a sufficient background of education and training. This is particularly true in relation to scientific and technical skills. The present object of in-service training in the civil service is not primarily to keep employees up to date with new developments or to offer a non-formal alternative to formal training. The primary aim is to improve the basic knowledge and skill of persons already employed whose qualifications may be inadequate because at the time they were recruited no adequately qualified candidates were available. A further object is to train employees rapidly in a particular skill where qualified manpower is scarce, which includes training for accelerating promotion of lower-grade technical officers.

Responsibility for estimating training requirements and organizing courses rests with the individual ministries; there are no central arrangements for reviewing and interrelating requirements. Most ministries have training schools attached which also provide regular pre-service training. Certain institutions serve the civil service as a whole. The Civil Service Training Centre and to a lesser extent, the Dar es Salaam Technical College, train people for the general services; the Institute of Public Administration caters for persons at the higher levels of administration.

In 1964, some 2,000 people passed through in-service courses of one kind or another. This figure, which represents 2 per cent of total employment in the public services, can be broken down between the various ministries and services, as in Table 8.

TABLE 8. Output from civil service training courses, 1964

President's Office (administrative officers' course)	10	Community development and national culture	56
Health	47	Office of the Second Vice-President (judiciary)	12
Communications and works	104	General service courses (principally office skills)	1 217
Lands, settlement and water development	2		
Home affairs	145		
Commerce and co-operatives	83	Total	2 010
Education	193		
Agriculture	121		
Labour	20		

NOTE In addition, the Institute of Public Administration trained fourteen local-government officers and twelve district magistrates

The duration of courses is from two weeks to three years, the average being about six months. Output is highest from general service courses (one to twelve weeks) and, in individual ministries, from education, home affairs, agriculture, and communications and works.

Responsibility for developing training programmes is scattered among the various other tasks of three services of the central establishment division of the President's Office:

1. The *staff inspection section*, which is responsible, *inter alia*, for investigating training requirements.
2. The *training development unit*, which should develop new training programmes on the basis of information provided by the staff inspection section, and also review ministerial training programmes with a view to ensuring the best possible use of resources.
3. The *common cadres, training and recruitment section*, which has responsibility for training policy and co-ordination of the training programmes of the public service as a whole.

In practice, however, the system does not work effectively. The link between the staff inspection section and the training development unit is a tenuous one; the unit appears to spend a very small proportion of its time on programme development and tends rather to be concerned with organizing instruction in supervisory and management skills. Secondly the function of co-ordination does not seem to have proceeded beyond the distribution of information. One of the chief reasons for this situation appears to be that each of the three services acts independently of the others. They are not linked under a higher authority with specific responsibility for training questions. Such an authority does not in fact exist. The staff inspection section does not, for example, undertake analyses according to a centrally agreed programme. Rather it organizes its work on the basis of the needs expressed by different government services individually, or according to its own assessment of requirements.

Planning of enrolment for courses within individual ministries is done usually one year in advance. No case was observed of any long-term estimate of in-service training requirements, nor was any systematic method in evidence of establishing priorities between different kinds of in-service training or between in-service and pre-service training. If it is decided to upgrade a certain number of employees in a given grade, a few may be trained each year until all those capable of completing the course have gone through. Since in-service training is generally of short duration, it is possible without planning very far in advance to arrive at a reasonable balance between the supply from such courses and related employment needs. However, output from in-service training may have to be related, on the one hand to the output of similar skills by the formal educational system, and on the other to the output of pre-service courses leading to similar qualifications. It would therefore seem necessary to establish at least an over-all view of in-service training needs several years ahead, even if adjustments have to be made from year to year.

Another question which arises is whether it is in fact necessary to centralize in-service training requirements. It seems logical that specialized ministries, which are the best judges of their own requirements, should themselves be responsible for preparing their own training estimates; the needs of these ministries are so little related that centralization does not appear as a necessity. It seems equally logical that in-service training needs which are common to the civil service as a whole—such as those for accountants, secretaries and higher-level administrators—should be catered for centrally. And this is, in fact, the case in Tanzania.

As output from the formal educational system increases and improves in quality, the nature of in-service training will change. The need for upgrading courses as a means of developing skills and knowledge will diminish, and in-service training will be increasingly directed towards continued learning and instruction in new developments. An abrupt discontinuation of upgrading courses can, however, lead to discontent among those who see in them the only way to further training and promotion; it has been known for such courses to be continued largely to prevent employees leaving their jobs for lack of promotion opportunity.

4 Other types of non-formal education

The types of non-formal education still to be discussed are correspondence and part-time courses. These are organized on a rather small scale and are not seen as an important means of human resource development. They are mainly of two kinds: those aimed at imparting specific knowledge or skills and sanctioned by recognized examinations, and those designed primarily for broadening the general and cultural outlook of the public.

The former are given by the Dar es Salaam Technical College and by a private correspondence institution, the British Tutorial College. The technical college offers evening classes in commercial courses, complete junior and secondary courses with a scientific bias, technical courses etc. The tutorial college, which operates from two centres, offers courses in general, commercial and technical subjects. Both cater mainly for individuals wishing to supplement their education and who, for one reason or another, have not been able to continue in the formal system. Many of the students following evening classes at the technical college are Asians who, with the absorption of their schools into the national system, have fewer formal educational opportunities than before. The technical college had in 1965, an estimated attendance of 1,600, some 800 in commercial courses, 200 in technical courses and 600 in general and other courses. Enrolment at the tutorial college was estimated at 2,000 in 1965.

The fees charged by the tutorial college, which are about double those of the technical college (although they are returnable if examinations are not passed within twice the normal period) must limit the number of those able to study through these means. The cost of a course in two subjects at London University General Certificate of Education ordinary level (normally taken after four years of secondary school) represents the median African wage for two months.

Although part-time and correspondence courses are unlikely to be introduced on a large scale as a regular alternative to formal education, some of those organized in conjunction with employment might profitably be developed. An example is the two-year correspondence course for upgrading teachers from grade C (which is being discontinued) to grade B, which was arranged by the correspondence college in co-operation with the Ministry of Education. The course is combined with short intensive training periods at teacher-training colleges at the end of each year. There are also the sandwich courses mentioned earlier and run by the technical college.

Another interesting experiment in education by correspondence has been initiated by the Co-operative Education Centre, which was established with Scandinavian assistance to train local co-operative staff and committee members. Instructional booklets are sent either to individuals or to committee groups for discussion (the second alternative does not require all members to be literate), and the results are sent to the centre which returns them with corrections and comments. In order to encourage the setting up to study groups and educational activities, in general, 'contact men' are selected for training by the centre.

Courses of the kind aimed at broadening the general and cultural outlook of the public are given by the Institute of Adult Education (attached to University College, Dar es Salaam) and its four regional centres. They range from economics and industrial management to dramatics and speed reading and had an enrolment of about 1,500 in 1965. Courses are deliberately designed not to be restricted to any examination curricula, although some students enrol with the object of preparing for outside examinations. Of twenty-nine people enrolled in the second-level economics course, nine had this intention, and of the fifty-eight following the course of public administration six. The absence of examinations may have some advantages, but it can also diminish incentive for regular attendance and individual study.

The institute could usefully extend its activities, particularly in connexion with the community-development programme—a possibility which is, in fact, being considered. It could for example, initiate research on literacy teaching and train senior community-development officers concerned with adult teaching.

Conclusion

It would be unrealistic to try to draw any generally valid conclusions from the experience of a single country, and while ideally non-formal education should be all of a piece, in a neat and tidy comprehensive plan carefully tied up with the development of the formal educational system, it is hard to visualize it in this way because of the variety of aims and methods involved, as this paper has shown. Nevertheless, the study of the Tanzanian experience does suggest that there are a number of elements which deserve to be considered more closely when deciding how best to approach non-formal education as a part of national development. One of these is the problem of co-ordination both at the planning stage and at the stage of implementation between related non-formal programmes. A second is the extent to which a division of labour may be established between non-formal and formal education. There is also the problem of the organization and administration of non-formal education.

The information which has been presented shows that the different types of non-formal education have been developed in response to a variety of economic and social demands and following the generally unconnected initiatives of different ministries and institutions, in the civil service and in private industry, in the rural sector and in urban centres. But despite this multiplicity of control and interests, substantial advantages might well be obtained through closer co-operation where different programmes operate in related fields. As far as community development, health and agricultural extension are concerned, which bring their main effort to bear on the improvement of the conditions of life of Tanzania's vast rural population, it would appear that an approach combining the efforts of different services in joint programmes produces better results than a dispersed and unco-ordinated use of resources. There would seem to be a case, in so far as the aims of community development permit, for choosing priorities according to economic considerations. There is strong evidence that programmes and individual projects are most successful when the interest to learn is combined with the opportunity to use the fruits of this learning for concrete ends, such as improvement in the yield of crops, the introduction of new crops or the increase of earnings in town employment through further education, including literacy; in other words, when non-formal education is seen as a means to economic rather than purely cultural or social ends.

Such information as is available shows that expenditures on the different types of non-formal education designed to improve conditions and productivity in the rural sector represent a proportion of total central-government recurrent expenditure which probably does not exceed 5 per cent, i.e., about one quarter of recurrent expenditures on formal education. While there are clearly not sufficient elements available in this case to permit a judgement (particularly on the educational value of the programmes involved), as to whether this balance is the right one, the question of the complementarities and possibilities of substitution between the two approaches would seem to be one requiring consideration—for example in deciding the future growth of formal primary education and 'remedial' community-development work respectively. In this connexion, the part of external assistance in promoting non-formal education, particularly in the rural sector, also requires study.

In determining an effective balance between non-formal and formal education in Tanzania it would also seem desirable to strengthen the planning contacts between the Ministry of Education and those responsible for the different types of in-service training. In-service training in the civil service is to a considerable extent designed to compensate for quantitative and qualitative deficiencies in the formal system. This might be taken account of in planning output of different types of educated manpower. A characteristic of non-formal training is that it can often produce skilled personnel more quickly and at lower cost than formal institutions. Thus Tanzania has been led to examine the possibility of introducing a centrally organized system whereby individual enterprises would have the main responsibility for training skilled workers.

Despite the widely divided nature of the different types of non-formal education there would therefore seem to be a need for a greater degree of planning and co-ordination at the central-government level. Tanzanian experience suggests that there are also useful possibilities of co-operation at the regional and project levels that could provide a means of concentration of effort. Perhaps the greatest single need is for integrated action in the training and distribution of personnel, in order that an adequate number of workers, with the requisite outlook and technical ability, should be available for co-ordinated activity at the project level. Tanzania's achievements point the way towards a new and valuable approach to the use of non-formal education in economic and social progress.

The legal framework of educational planning and administration in East Africa

Kenya, Tanzania, Uganda

J. Roger Carter

Foreword

It is a fact of cardinal importance to educational planning, and to understanding the anatomy of educational change, that every educational system lives within its own special legal system. This legal system is the product of past legislation and of accumulated administrative rules, regulations, relationships and routines that for all practical purposes have become common law. For the outsider this juridical web is largely hidden from view; for the insider it is as natural as the air he breathes; but in any event it plays a fundamental role in giving direction, order, cohesion and stability to the complex educational enterprise.

Sometimes, however, it provides too much stability, as for instance, when a colonial country makes the great leap to independence and struggles to accommodate its educational system to the vastly changed national needs and aspirations which accompany the new status. Under these circumstances the old rules and administrative customs may become serious impediments to necessary changes. Governments, which must plot the course for such transition, therefore must give attention to reshaping the legal system to fit the new shape that education itself must take.

This important aspect of educational planning has received relatively little attention. Thus, the Institute asked J. Roger Carter, Adviser on Legislation to the Ministry of Education in Kenya, to prepare the present case study which reveals the experiences of three East African countries that have lately been making this transition—Kenya, Tanzania and Uganda.

The author sees the legal structure as an expression of the spirit of the age and traces its development through three successive stages of colonialism and independence. Whereas in earlier stages the government's role was the more passive one of supervising the semi-independent activities of voluntary bodies, leaving to them the main initiative for educational development, it has now become the much more positive one of taking prime responsibility for national educational development, including its finance. Thus it is not surprising that the legal and administrative basis of education inherited from colonialism has been found inadequate to the new situation.

The author finds, moreover, that the old legal structure has been slow to change. He concludes, therefore, that there is need to adjust legislation further (all three countries still base their legislation on colonial ordinances) in order to provide the necessary authority and elbow room for government initiative at every level to promote educational development. A number of very practical problems must be faced. For example, a large measure of local control over primary education co-exists with heavy central government responsibility for its finance; to what extent should control be exercised by government when it provides the funds? Similarly, the question arises whether the powers of primary school management now residing in the hands of churches and missions, within the framework of local responsibility, are compatible with central government's new responsibilities. The author stresses the need to achieve a proper balance between a strong central power and local initiative, and between public and private endeavour. At the second and higher levels, where the government has central responsibility but where administration is carried out by boards of governors, the author shows that proliferation of institutions and shortage of administrative personnel have given rise to new problems of educational planning and management.

Legal arrangements and administration of course go hand in hand. Thus an important conclusion of the study is that, besides modernizing the legal structure, it is essential that a strong educational planning process be established and, above all, that an adequate supply of competent educational administrators be trained for every level. For in the last analysis it is the administrators of the system and the inspectors who must take initiatives to develop it, to ensure its quality of performance, and to enforce individual rights in education.

The Institute is grateful to Mr. Carter who prepared this valuable study, and to the officials of Kenya, Tanzania and Uganda who helped him along the way.

PHILIP H. COOMBS
Director, IIEP

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Introduction

Education in the countries of East Africa, as in other countries formerly subject to British influence, has passed through three well-defined stages of development: the period of private enterprise principally associated with the activities of the Christian missions, the period of State-supported private enterprise, and the period of State responsibility and planning. At a rough approximation, these stages coincided respectively with the period prior to the First World War, the period between the wars and the period after 1945. This kind of historical scheme is, of course, more convenient than precise, for it would be wrong to infer from it that the State was wholly disinterested in education during the first period, or wholly responsible during the last; educational history, like all human history, is a continuum, in the course of which prevailing attitudes and ideas, and the institutions in which they are mirrored, are gradually transformed as a result of changes in the social structure and in the needs of the economy.

Superimposed on these changes were the displacements caused by the transition from colonial government to independence. A racially stratified society, governed and ordered by a colonial power, gave place to a composite, but basically democratic and egalitarian, social organization, unmistakably marked by the vestiges of an earlier tribal society, yet containing the germ of a new, essentially African, ordering of human relationships and obligations. These far-reaching social changes naturally gave rise to widespread changes in the educational system and its objectives, in addition to those that flowed inevitably from the growing complexity of social and economic organization. Thus, the State, having taken over responsibility for the planning and direction of education, has been obliged to cope at one and the same time with the growing demands of an increasingly organized and in some measure State-directed economy and the problems posed by a social revolution.

In discharging this responsibility, the State must begin by evolving an educational policy which expresses, or makes room for the expression of, the social and economic requirements of the new age. In the colonial period, education was permeated by the spirit of a paternalistic and racially stratified society. Now, however, education must give scope for the attainment of national objectives based on the participation and enthusiasm of the people as a whole. After new policies have been formulated and new administrative arrangements agreed upon, it is necessary to embed these policies and arrangements in legislation, in order that changes may be brought about by orderly processes and the system of education made to conform to the new requirements placed upon it.

Thus, the law is the ultimate, formal expression of the spirit of the age. This is seen very clearly if we cast our minds back to the three periods of educational history previously referred to. In the first period, the State, having little to do with education, takes little or no cognizance of it in law. During the second period, however, legislation becomes necessary to prescribe the conditions under which the State is prepared to underpin the efforts of the voluntary agencies. The State's role is, however, largely conditional and passive and, therefore, the law places on the State no general obligations to provide for the education of the people. Thus, section 3 of the Kenya Education Ordinance of 1931 (now repealed) refers to the Governor's functions of control, but imposes on him no duty to provide education, though it permits him to do so. The fact is that, in this phase, the Christian mission is still the pacemaker, and if the pace has quickened somewhat as a result of the additional resources made available by the State, it still proceeds mainly from a missionary initiative. In the third period, however, the law places on the State inescapable and primary obligations to provide for the education of the people. Such obligations are exemplified in section 3(1) of the Education Act (Cap. 211), which came into force in Kenya on 1 January 1953:

> '3(1) It shall be the duty of the Minister to promote education in Kenya and the progressive development of schools, consistent with the powers of direction and control vested in the Minister by this Act.'

This duty of the Minister of Education is extensive and progressive, though it remains consistent with the exclusion for the time being of large sections of the population from any formal education. But the responsibility is now squarely placed on the government and a journey has already begun on a road that can only end with universal and compulsory education during the years of childhood and adolescence and with other educational services in response to the nation's needs.

Let us now analyse in greater detail the purposes of the law as an ultimate, formal embodiment of educational policies.

First, the statute law is an expression of the intentions of parliament and consequently, on the representative principle, an embodiment of the popular will. It is at the legislative stage that the government's judgements on questions of policy, and on the powers needed to carry out a policy, are subjected to scrutiny. At a time of rapid change and development, extensive powers are essential; yet it is equally essential that such powers be subject to such limitations and safeguards as are required to secure general assent and to avoid unwarranted inroads on individual rights and liberties. To strike the right compromise between the needs of efficient planning and administration and the importance of attracting popular support presents the government with a problem of some difficulty, and there will be more to say about this later.

Secondly, the purpose of a law is to define and to limit the powers, rights and duties of those participating in the educational process, particularly of the government. In the case of private individuals, voluntary bodies, or subordinate organs of government, the penalties for stepping beyond the assigned limits may be built into the law itself, but where the transgressor is the government, redress is normally only possible in parliament, or in the courts; in parliament, by the refusal of financial appropriations, or even by the overthrow of the government; in the courts, by ordinary civil process under the Government Proceedings Act.

At present, in East Africa, the right of appeal to the courts for a redress of wrongs committed by an administration is seldom used. Attempts at redress are usually confined to personal appeals to ministers or civil servants which are dealt with *ad hoc* on the best evidence available. There is, however, every possibility that the use of legal remedies will grow as people and associations become more litigious. Where excesses are committed by the lower instances of educational administration, such as local authorities and boards of governors (see Chapter 2), remedies may be effected by the central government itself in its supervisory capacity by a quasi-judicial procedure. An example is found in the Kenya Education Act as recently amended. This procedure formalizes and endorses the hearing of appeals by aggrieved persons hitherto often dealt with *ad hoc* by the minister or his staff. Under the new arrangements, the minister listens to a complaint and then, after due investigation, and provided that he is satisfied that the subordinate authority has acted, or proposes to act, unreasonably, or has failed to discharge a duty laid upon it, he gives such directions as may be appropriate. The decision whether an action is unreasonable is not based on political expediency, but on the facts as presented, and in this sense is of a detached and quasi-judicial character. Being the grant-aiding and supervising body, the minister would have no difficulty in enforcing the directions given. The section concerned reads as follows:

> '86 (1) Where the Minister is satisfied, upon complaint made by any person or otherwise that a county council or a municipal council, or the Board of Governors or manager of any school, has acted or is proposing to act unreasonably in the exercise of any functions entrusted to it by or under the Act, he may give such directions as to the exercise of such functions as appear to him expedient.
>
> '(2) If the Minister is satisfied that a county council or a municipal council, or the Board of Governors or the manager of any school, has failed to discharge any duty imposed upon it by, or for the purpose of, the Act, he

> may give such directions as may be necessary for securing compliance with the Act, after consultation with the Minister for the time being responsible for local government.'

Thirdly, it is the object of a law to enable public funds to be used for educational purposes and to lay down the conditions for such use. The actual allocation of funds for the various authorized purposes then depends on annual financial legislation in the form of Appropriation Acts.

These three principal features of the statute law are characteristic of any of the executive functions of government in a parliamentary democracy and are not in any way peculiar to developing countries, or to education. Nevertheless, in a developing country, and in respect of education, legislation presents certain special problems. It must be remembered that inadequate powers may seriously hamper the government's efforts to plan and control the growth of the educational system. On the other hand, excessive powers carelessly used can also retard the progress of education by provoking dissent. Further, the forms in which legislation is expressed, whether from the point of view of language and structure, or from the standpoint of the balance between major and minor instruments, can influence the efficiency of educational administration. These considerations acquire a special importance at a time of rapid educational change, since the problems encountered are more various and the stages of growth less easily foreseen than in a country with a comparatively well-established and static educational system. Furthermore, education is the concern of everybody, and in this branch of government perhaps more than in any other the problem of reconciling local sentiments and loyalties with national aspirations is particularly acute.

1 Some legal aspects of educational policy in East Africa

It is neither possible, nor is it intended, to indicate here the whole scope of educational policy changes in East Africa. Not all of them involve, or require, legislation. There are, however, certain broad tendencies that have a direct bearing on the educational law.

First, all three East African countries are committed to educational planning as part of the conscious organization and control of their national life. Manpower surveys have been carried out in each country and, although they give at the present stage a somewhat factitious impression of accuracy, they provide broad indications of requirements over the next few years at various educational levels. In order to lay plans in response to these ascertained demands, the governments need powers of initiative and control at every stage in the system. The range of powers considered necessary varies with local circumstances. In Kenya, there is considerable support for the idea that the powers of primary school management now resting in the hands of churches and missions are incompatible with the necessary government control. The Kenya Education Commission, a body of leading citizens, felt that 'the historic practice of leaving management of maintained primary schools in the hands of missions or churches has outlived its usefulness' and that 'as a matter of principle, any primary school' maintained by a public authority 'should also be managed by the public authority which is financially responsible for it'. Under the Education (Management Committees) Rules, 1964 (S.R. No. 228 of 1964) in Uganda, only three out of seven members of the Management Committee of a primary school are provided by the foundation body (church), and in the great majority of cases financial control is in the hands of education officers employed by local authorities.

The need for wider powers to plan and control the system was, moreover, partly a result of universal suffrage and the articulation of the demands of an electorate for whom independence had created a new sense of hope and expectancy and a resolve to regulate their own destiny. This growing political consciousness and an awareness of the buoyant and often chronically unsatisfied need for educated and trained people created everywhere a demand for educational services well beyond the limits imposed by national resources. Moreover, belief in education as a birthright took increasing hold and underlay the campaign for universal primary education (as expressed in the governing party's election manifesto in Kenya for instance), and the effort through community action to create many more opportunities for secondary education than had hitherto been available. Members of parliament gave expression to these feelings in the constant pressure which they exerted on governments to expand the educational services, and caused administrations, almost in spite of themselves, to seek the wider powers necessary both to effect and to control the enlargement of educational opportunity.

Secondly, the establishment of religion, particularly of the Christian religion, in education has been seen as something inappropriate to the new dispensation. Whereas in colonial days Christianity was accepted as an ally of government for the moral training of subject peoples, the independent governments are pledged to the idea of secular States. This does not necessarily connote antipathy to religion ; indeed, the Constitutions of Uganda and Kenya recognize the rights of religious communities or denominations to provide education at their own expense but not restricted to any one group.

The reconciliation of the religious neutrality of the State with the constitutional position of religion and the historic role of the churches creates a problem of no small delicacy whose final solution is unlikely to be a simple exclusion of religion from the schools, as has become the habit in the United States of America, but an accommodation between the religious and secular views of education. To effect a compromise of this kind calls for great statesmanship, for it requires solutions which attract the widest measure of support in a matter in which few can be wholly satisfied. Moreover, the difficulty of finding an acceptable answer is greatly increased by the emotional content of the matter and the philosophical differences involved. At present, none of the three governments has finally grasped the nettle and, as a result, the problem continues in effect to be regulated by the principle—if indeed it is a principle—defined in Scottish legislation as 'use and wont'.

'Use and wont' may well prescribe a common-sense solution among a people deeply influenced by tradition, but it is unlikely to do so in countries that have just broken with a colonial past; where, moreover, religious differences extend far beyond the Christian sects and where the denominational uniformity of different areas is beginning to break down. Something more forward-looking, more systematic and [illegible] flexible is required. The essential features of such a solution must be expressed in law because duties, rights and safeguards are involved; and any such law must provide for change, for it is unreasonable to suppose that in so basic a matter final and lasting opinions have everywhere been established.

Lastly, the law must take cognizance of the responsibility of the State for standards of education in schools lying outside the public system. In Kenya, the 'Harambee' (self-help) school movement has made it harder for the State to shrug off all responsibility going beyond the formal processes of registration, while the growing belief that the government has an obligation to discharge on behalf of every child imposes on it a need to look to the state of non-aided schools, so long as it is itself unable to provide for all children. Questions raised in the Uganda and Kenya parliaments have shown that the governments of East Africa will not be allowed to escape a more direct responsibility for what goes on in the private sector in future.

2 Minimum government powers for planning, reconstruction and development

The devolution of powers on local authorities

The planning and control of education to which the three governments are committed as part of the general planning of national development require a concentration of power in the hands of the government sufficient to secure orderly growth and to overcome sectional obstacles to growth. A concentration of power does not, of course, imply dictatorship, since the schools cannot be run without the willing co-operation of a great many people, and such co-operation can only be obtained on terms that imply a measure of decentralized responsibility. The questions that have to be answered are how much responsibility is it right and necessary to delegate to local bodies in order to secure their enthusiastic help for running schools and whether this measure of delegation is compatible with the central government's responsibilities for planning and general control.

To such questions there is no simple answer, depending as it does upon the ability and temperament of those involved and upon the ties, financial or otherwise, that bind the central government to the subordinate bodies concerned. There also arises the question of overriding powers. It is clearly necessary for the government to be able to intervene if the subordinate body fails to perform the functions allotted to it, or performs them in a manner detrimental to education. On the other hand, too ready a corrective in the hands of the central government may damage the sense of local responsibility and deter able and public-spirited people from taking part in the management of schools. All these decisions are matters of judgement, and it is clearly essential that every possible care should be taken to reap the optimum advantage from the chosen system of delegation, both in securing the collaboration of responsible persons for local duties and in assuring adequate freedom of control to the central government.

Existing legislation provides for a pattern of delegation in the three East African countries which differs in certain respects, but has two main features in common:

secondary schools are entrusted to boards of governors, while primary education is managed by local authorities. These arrangements have, of course, much similarity with the institutions of school management in the United Kingdom, and it is something of an open question whether they will prove wholly suitable to the conditions of independent East Africa. Nevertheless, there is one respect in which they appear well tuned to the prevailing temper of the people: considerable efforts have been made by the governments of the three countries to obtain the active co-operation of the different sections of the population, and the administrative organs referred to provide an outlet for local energies into work of national importance.

It has been found, however, that serious errors can be made by inexperienced local administrators, so that it is essential to impose limits on their freedom of action and to exercise remedial or restraining powers at times. For this purpose, section 10 of the Education Ordinance of Tanganyika (No. 37 of 1961) empowers the government to declare a recalcitrant local education authority to be in default and either to direct the authority to perform certain specified functions or to transfer those functions to another body, which may include the government itself. Furthermore, a Tanganyika local education authority (separate legislation applies in Zanzibar) is only able to act in respect of primary education after seeking the advice of an education committee consisting of ten elected councillors and five representatives of interested bodies and organizations appointed by the minister.

Kenya legislation provides for the entrustment of functions in respect of primary education to local authorities and for the revocation or modification of such entrustment. At the same time, as shown earlier, the minister has powers to issue directions to a local authority if he finds that it is in default in the performance of its duties, or is of the opinion that it has acted, or proposes to act, unreasonably in the exercise of any of its functions. On paper, therefore, the minister holds extensive powers of enforcement and control, amplified by his power to make regulations about the management, conduct and curriculum of the primary schools. The weakness of his position, which is shortly to be looked into by a Local Government Commission of Inquiry, consists in the present block-grant system by means of which local authorities are in part financed by the central government.

Under this system, financial supervision of the whole range of local authority functions, including education, lies with the Ministry of Local Government, while control of the opening of new schools, the teaching staff, curricula and the standards of school premises are matters for the Ministry of Education. In theory, given proper inter-departmental consultation, an arrangement of this kind might be made to work reasonably well. It has the merit of avoiding a functional duplication of administrative services at the local authority level and should, therefore, be economical. At first sight, it is far from evident that a separation of local authority functions into compartments, each coming under the financial supervision of the appropriate ministry, would necessarily yield better results. The various functions compete strongly for local revenues as well as for central government support, and the distribution of resources by local authorities to their different functions under the block-grant system would, under a compartmentalized system, merely be replaced by an apportionment of the same revenues among functions by the central government.

There are, however, two respects in which the financial autonomy of the various local authority functions under the supervision of the appropriate ministry in each case is likely to lead to better results. First, although the government is, in theory, a single unit, the machinery, and still more the tradition, of inter-departmental co-operation is in its infancy. A mechanism for the control of local services, therefore, which depends for its success on the harmonious operations of two or more ministries, is too sophisticated for so large and important a service as education at the present stage of national development. Secondly, under the block-grant system, there is no means of ensuring that the separate decisions of forty local authorities on the resources devoted by them to education will, in fact, coincide with the planning requirements of the Ministry of Education. The only way to ensure this is to give the ministry ultimate financial responsibility for the activities of the local authorities in education.

In Kenya, the case for transferring financial responsibility for the educational activities of local authorities to the Ministry of Education has recently been strengthened by the decision to transfer the employment of all teachers to the government, or to a single para-governmental organization, a goal which has recently also received official recognition in Uganda. If the number of teachers employed is to be equated with the demand for teachers in the schools, there are clear advantages in subjecting the teacher force and the financial policy of the local authorities in respect of education to the supervision of the same ministry. It would be wrong, of course, to argue that a separation of these functions between two ministries would be impracticable in all circumstances, but for the reasons given above, a streamlining of education under a single supervising ministry is likely to work better in East Africa at the present time.

It may be concluded, therefore, that some devolution of responsibility upon local organs of management and control is necessary; that the local exercise of such responsibilities must be subject to standards in staffing, curricula and other matters laid down by the central government; that suitable reserve powers should be devised and written into the legislation providing for the devolution of responsibilities; and that the responsibility for the financial supervision and grant-aiding of local organs of educational administration should rest with the ministry responsible for education.

The role of voluntary bodies

Before leaving the question of subordinate levels of educational responsibility, it is necessary to say a word about the role of voluntary bodies, which, in East Africa, means principally Christian churches or missions, but also includes certain Hindu and Moslem communities. In the second stage of national development referred to at the beginning of this monograph, voluntary bodies were partially assisted by government grants, but retained nevertheless a large measure of autonomy and independence in the use of those grants and the provision of education. As the East African Commission noted in 1925: 'Hitherto, the task of providing education for the African has been almost entirely left to the missionaries.' The establishment of government schools in the years following did not noticeably infringe this practice, since they were, in the main, confined to areas in which the missions had failed to make an impact. As the East African Commission observed, missions were able to offer a rudimentary sort of education and to fulfil their own sectarian purposes at one and the same time. Education was linked to church membership, or included preparation for it. Moreover, the education offered converged upon religious rather than social ends. The second period, then, was one in which the State made a bargain with the voluntary bodies, in terms of which the latter took over virtually the whole of the task—such as it was—of popular education in return for financial aid under a system of control that did not seriously infringe the right of the missions to pursue their religious objectives.

These principles became increasingly unacceptable in the third period of development, although certain residues have survived. For example, the idea that the voluntary bodies should continue to supervise their own schools is still current in Uganda and remained a general policy in Kenya until the early 1960s. Supervisory teams, supported out of government grants, were provided by the voluntary bodies themselves. However, the incompatibility of self-supervision with ultimate government responsibility, became increasingly apparent in Kenya and Uganda in recent years. In Kenya, the supervisory teams gave place after 1960 to a system of supervision by local authorities acting in their delegated responsibility for primary education. More recently, there has been some pressure to transfer the supervisors to the employment of the central government itself and there is some possibility that they will soon be annexed to the ministry's inspectorate. In Uganda, voluntary agency supervisors were abolished in 1964 and supervision in effect became a responsibility of the education officers of local authorities.

In primary education, as shown earlier, there has already been talk in Kenya of relieving voluntary bodies of all responsibility for the management of primary schools, leaving them only with certain residual rights with regard to religious education and the choice of teachers. Such a step would transform radically the role of the voluntary body into that of junior partner and would vest the real responsibility for primary education in the secular State. A similar relationship has been created by the decision of all three governments to remove secondary schools and training colleges from the exclusive management of missions and churches and to vest them in boards of governors, on which the voluntary bodies formerly responsible become partners alongside representatives of the communities served by the institutions in question and other interested persons. Under these forms of partnership, the characteristic stamp of a church-related institution may well remain largely unchanged, but the new type of management will at the same time ensure that all State-supported education conforms to national standards and is carried on for the benefit of all and not in the primary interest of any one section.

These changes in the relationship between the State and the voluntary bodies have been accompanied by changes of attitude on both sides. The voluntary bodies have ceased to be the principal purveyors of education and have come to recognize themselves as service organizations, with a special contribution to make to, and within, an educational system for which the State has assumed a dominant responsibility.

A consequence of this retreat of the old voluntary bodies into a subsidiary and specialized role has been a radical change in the problem of control. In former years, the main problem was that of exercising control over the semi-independent educational activities of the voluntary bodies. Today, it lies in the degree of restraint and compulsion that can be exercised over the public education authorities and the semi-public boards of governors. In this context, control over voluntary bodies in public education has assumed minor proportions and is a largely automatic result of the working of the new secular organs of management.

The maintenance of educational standards

We turn now to the maintenance of educational standards, a much more difficult and complex task than is sometimes realized. 'Standards' in education are the result of a variety of circumstances and influences, such as the maturity, education and training of teachers, the supply of educational materials and the teaching methods employed. All of these elements can in principle be 'controlled', even if in practice shortage of money or manpower imposes limits on what can be achieved. In addition, educational standards are affected by personal and psychological factors that are beyond the reach of government directives. Such are the relations of head teachers to their staffs and the attitude of inspectors. A good professional atmosphere is, indeed, essential to education, because education implies growth and creative activity which cannot prosper in a context of poor personal relations and discontent among the teachers.

Educational standards are in a special sense the business of the inspectorate.

This business can be thought of as possessing two aspects, a normative and controlling function and a creative and inspirational function. The normative function is exercised in such activities as the inspection of non-aided schools, a large part of which consists of checking up on the premises, the staffing, the books and the syllabuses. Basically, it amounts to a policing of the Education Act and of its various rules and regulations. It is, however, clear that the more of the policeman's work there is to be done the less time, energy or peace of mind will be available for truly inspirational activity.

Since no East African country can at present afford to employ an inspectorate of the required size, qualifications and experience, the number and extent of the controls that can properly be exercised are limited, not only by the number of inspectors available, but also by the extent to which it is wise or possible to deflect their attention from the inspirational activity to the normative. Thus, whenever it is proposed that the government should control some part of the educational system, it is necessary to ask, first, what is the least number of controls that can be effective, and secondly, whether the manpower is available to carry them out, having regard to the existing duties and, particularly, to the more creative preoccupations of the inspectorate.

Controls and remedies

The more the educational system is planned and regulated from the centre the greater the number of controls that are likely to be involved; and the control over standards of education is foremost among them. It is, therefore, relevant to consider how this number can be kept to a minimum. In East African practice, there are three or four levels at which responsibility for education is exercised. Taking primary education as an example, there is, in Kenya and Tanzania, the overriding responsibility of the minister. Under him, responsibility is entrusted to local authorities under the safeguards described earlier. Below the local authority, there is the headmaster, and below him the individual teacher. Control at each level is provided by the level immediately above, and provision is made in this way for the transmission of authority from top to bottom.

The effectiveness of such a control system depends, in the first place, on the attitude and efficiency of the component parts. Local authorities in their infancy are not always efficient, and it will already have been noticed that in Tanzania, before dealing with any educational matter, they are obliged to consult an education committee of fifteen members, of which ten are members of the authority and five are appointed by the minister. In Kenya, doubts have been felt about the present efficiency and capacity of local authorities acting alone, and these have prompted suggestions that educational questions should be considered by some kind of committee or board in which elected councillors are associated with persons nominated by the minister, on somewhat similar lines to those existing in Tanzania. Accordingly, the first requirement is to devise a system of local administration that gives adequate scope for local responsibility and initiative, while offering reasonable assurances of efficiency. The supervisory role of headmasters is also important. As the Kenya Education Commission has insisted: 'Everything should be done to inspire heads with their responsibility to give educational leadership in their schools, that is, to supervise, guide and encourage.... The head of a school ought to be the main source of inspiration and his supervisory function should be viewed in this light.'

Thus, careful attention to the efficiency of administration and leadership at each level is the first requirement of a well-directed system of education. A satisfactory framework is only one of a number of factors contributing to efficiency, but it is an important one. Built into the framework, there must be disciplinary powers for use in an emergency, to deal effectively with breakdown or default. The powers of the minister in Tanzania and Kenya for dealing with default by local authorities have already been set out. Basically, these powers rest on displacement of the authority as an ultimate sanction. In England and Wales, the minister cannot relieve an erring authority of its functions, but is able instead to give directions to it that are enforceable in the courts by a writ of mandamus. In East African conditions, a direct take-over of local authority functions is likely to be more satisfactory than legal proceedings, which are liable to be time-consuming and uncertain in their results. As has already been noted, Kenya law also provides for the minister's quasi-judicial intervention, a power that might provide a useful corrective to ill-advised actions based on tribal or racial prejudices.

The disciplining of teachers is another aspect of negative control. A teacher who is found to be failing grossly in his professional obligations must be removed before any more damage is done to the education of children. Dismissal for educational inefficiency usually involves a very difficult decision and is seldom contemplated, except in the most serious circumstances. Disciplinary proceedings against teachers tend, therefore, to be concerned with more easily defined transgressions, such as cruelty, or moral turpitude. The law in each of the East African countries provides for the exclusion from teaching of any person who shows himself, whether as a result of criminal prosecution or otherwise, to be unsuitable for employment as a teacher. All three countries provide machinery for appeals against exclusion from teaching on disciplinary grounds.

The foregoing paragraphs have been concerned with the general question of controls and they postulate two requirements: first, that the structures of the system should be planned as carefully as possible to combine the exercise of effective central authority with adequate local consultation and support; secondly, that the powers of supervision and control should be adequate to deal with any likely breakdown or default. Clearly, this account omits reference to personal factors, such as selection and training, which are also vital to the cohesion and efficiency of the system; but they lie outside the scope of this monograph. It is within a properly constructed framework of controls that the schools are likely to be most responsive to the detailed planning and direction of the central government. Such detailed direction may relate to the accommodation, furnishing and equipment of schools, the qualifications of teachers, the syllabus, books and practical demonstrations and other factors which are important from the point of view of educational standards and efficiency. The ministry, with its tiny inspectorate staff, cannot hope to police all these areas in detail and, therefore, the standards of efficiency spontaneously achieved at the subordinate levels have special relevance. With the available resources, it is hardly possible for the inspectorate to undertake more than occasional 'spot-check' visits in a random sample of schools. The impact of such inspections is likely to be significant only if their frequency is sufficient to ensure that the chances of a particular school being visited are appreciable.

Historically, the inspection of primary schools was often carried out by education officers, who were themselves involved in educational administration or supervision, or were practising teachers borrowed from secondary schools or training colleges. A merging of supervision and inspection presented no great difficulty so long as both supervisor and inspector were responsible to the central government. However, with the creation of local education authorities answerable to local electorates, partly or wholly responsible for school management, and employing their own supervisors (whether on secondment from the Civil Service or otherwise), the position of an officer combining the functions of local government supervisor and central government inspector became more difficult. Such a combination might involve a division of loyalties that, in wealthier countries, would be regarded as heterodox and unacceptable; but in East Africa, where skilled and trained inspectoral or supervisory staff are scarce and financial resources limited, some judicious dovetailing of the two functions will probably continue to be justified for some time to come.

Before departing from the subject of controls, it is well to say a word about examinations. An examination system organized by the ministry is one powerful means of sustaining educational standards. It is a rough and ready method and is well known to have certain effects that, educationally speaking, are disadvantageous. However, the use of such a system in the primary schools of East Africa is an inescapable necessity at the present time. The examination instrument may also provide the cheapest and easiest means of controlling standards in non-aided schools. It has, for instance, been suggested that the government take powers to forbid the issue by schools of any diplomas other than those approved by the ministry. This would oblige schools to enter their pupils for examinations either conducted or approved by the ministry, and it is believed that such a system might greatly improve standards, for example, in non-aided secretarial schools, where the proprietors would be compelled to use the facilities of reputable external examining bodies, such as Pitman's Institute, and desist from the issue of their own decorative, but often worthless, certificates.

The foregoing considerations are not intended to offer a final or complete solution to the control of educational standards, but only to suggest a line of approach. Each control device needs to be judged by its effectiveness, on the one hand, and its claim on manpower and other resources, on the other. In devising means to influence the individual teacher, it is a foremost necessity in these countries to strengthen the bonds between the centre and the parts, not only because of the low average educational attainment of the primary school teacher, but also because of the desired rate of advance, for which the centre provides the main impetus.

Planning powers

The powers so far mentioned are powers of control of the school system as it already exists. In addition, it is essential that governments have the power to plan the system as it will be. The Uganda Education Ordinance was amended for this purpose by the Education (Amendment) Act (No. 83 of 1963) and now lays upon every education committee outside the Kingdom of Buganda the responsibility for the preparation of a development plan, in consultation with the education officer for the area, for approval by the minister with or without modification (section 32). Similarly, education committees in Tanganyika count among their functions the responsibility for submitting to the minister plans for the promotion and development of education and for carrying out such plans when approved by the minister [section 8(i)(a) of the Education Ordinance (No. 37 of 1961)]. Similar planning provisions appear in the Education (Entrustment of Functions to Local Authorities) Order, 1965, made under the Kenya Education Act. The planning of primary education is in the first place local matter and in no other way can local circumstances be taken fully into account. The planning of post-primary education of all types is undertaken by the central governments in all three countries on their sole responsibility, though not without regional consultation in appropriate cases.

Special problems in secondary education

So far, we have dealt mainly with the control and planning of primary education. Secondary schools, teacher-training colleges and establishments for technical and commercial education in all three countries are administered directly by the respective ministries of education, through boards of governors established in each case by the minister. Unlike primary schools, these institutions rely wholly on revenue from fees[1] and from the central government. Their dependence on grants from the central government, and (in Tanzania and Kenya) the minister's power to disestablish any recalcitrant board of governors, give the government wide powers of control which provide sufficient scope for the formulation and execution of a national plan. At the same time, the boards ensure a reasonable degree of local consultation and relieve the ministry of much detailed administrative work which would be difficult to discharge efficiently from the centre. However, the rapid proliferation of secondary schools and other institutions is likely to raise new problems of control due to the difficulty of finding sufficient able and experienced people to man so many boards. The solution may lie in a redistribution of responsibilities between government and board, or in the formation of joint or district boards with responsibilities for several institutions. Neither of these solutions is free from drawbacks, the first because a greater accumulation of responsibilities at the centre is bound to raise bureaucratic issues that may not be altogether good for a healthy school system, the second because plural responsibilities may impair the personal and particular interest of a board in a single school. However, the problem illustrates the difficulty of finding ideal solutions and the danger of applying to the circumstances of a developing country, without appropriate modification, methods that have been found satisfactory elsewhere.

Personal rights in public education

Personal rights are of great importance in the system of education of any democrattic country. Reference has already been made to the kind of compromise that is enforced on the educational system of multi-religious States, particularly where, as in Uganda and Kenya, religious rights are entrenched in the basic law. Tanganyika has recognized the rights of parents as a matter of general principle in the following terms in section 5 of the Education Ordinance (No. 37 of 1961):

> '5. In the execution and performance of all powers conferred and duties imposed upon them by this Ordinance, the Minister and the Local Education Authorities shall have regard to the general principle that, so far as is compatible with the provision of efficient instruction and training and the avoidance of unreasonable public expenditure, pupils are to be educated in accordance with the wishes of their parents.

This section is identical with section 76 of the Education Act, 1944, of England and Wales and provides some safeguard of the right of parents to send their children to a school of a chosen denomination. However, its effectiveness is severely circumscribed by the absence of any practical choice in most areas of East Africa, and the rights of parents referred to in the section are thus in large measure illusory. This increases the importance of devising an equitable machinery for determining the religious complexion, if any, of a particular school; some means of testing local opinion from time to time seems to be called for.

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[1] There are no fees at training colleges for teachers, except at grade II training colleges in Uganda. In Tanzania, fees at secondary schools have been abolished, and in Kenya they have been abolished in sixth forms (the last two years of secondary education).

A necessary element in any system which allows for religious instruction at all is the legal right of parents to withdraw their children from such instruction. Such a right is now entrenched in the basic law of Kenya and Uganda, and, in the former case, section 15 (3) of the Education Act also places on a school the obligation, so far as practicable, to provide facilities for religious instruction and worship desired by a parent, if it is of a kind not provided in the school. It is, however, doubtful whether section 15 (3) has any practical significance at the present time.

Individual rights are also recognized in the law of Uganda and Tanganyika in the provision made for appeal tribunals. Section 34 of the Tanganyika Education Ordinance (No. 37 of 1961) provides for appeal tribunals of three persons appointed by the minister, while Part V of the Uganda Education Ordinance (No. 13 of 1959) enables the minister to set up general or *ad hoc* tribunals of three members, the chairman being a resident magistrate or other lawyer. While the tribunals of Tanganyika and Uganda are competent to hear a range of matters, those set up under section 64 (3) of the Education Act of Kenya are limited to appeals against cancellation on disciplinary grounds of a certificate or licence to teach. Section 34 of the Tanganyika Ordinance provides for the hearing of appeals against the following types of decision by the ministry:

'34 (1) (a) refusing to approve any person as manager of a school;
(b) withdrawing approval of any person as manager of a school;
(c) refusing to register any school in the register of schools;
(d) removing any school from the register of schools;
(e) ordering the closure of any school;
(f) refusing to register any teacher in the register of teachers;
(g) removing or suspending any teacher from the register of teachers.'

The existence of a tribunal to which appeals against the administrative decisions of the government can be made helps to remove cause of friction and to reduce the danger of dislocation of services arising out of local or sectional pressures.

3 The form and structure of legislation

It goes without saying that all legislation in a developing country must be direct, simple and clear. The people of East Africa have a long and intimate experience of verbal and customary law, but the administrative role of the statute law is comparatively unfamiliar to them.

Simplicity is partly a draftsman's problem. It also involves a discerning choice of machinery and may sometimes require a somewhat more rough and ready procedure than theoretical considerations might suggest. For example, arrangements for the assessment of parental means in the administration of a scholarship programme may have to aim at a rough justice by taking into consideration a few important criteria of need, rather than require detailed inquiry.

Reference was made earlier to the balance between major and minor instruments and to the importance of allowing for rapid social changes. It is difficult, at a time of reconstruction and development, to approach new legislation with the deliberate precision that is possible in the more leisured atmosphere of a country with well-established traditions. Consequently, Acts of parliament should not be framed in such detail as to impose too much rigidity on the educational structure. On the other hand, it is clearly important that they be sufficiently precise to make unmistakably clear the will of parliament on the main issues. It is, therefore, suggested that Acts of parliament concerning education should, in the main, be divested of detailed administrative provisions and be concerned principally with two matters, namely, the powers and duties of the minister and the rights of individuals.

Subsidiary legislation (rules, regulations, orders) is primarily a matter for the minister, though under section 34 of the Interpretation and General Provisions Act of Kenya, rules and regulations must lie on the table of parliament for twenty sitting days, during which parliament may annul any of them by resolution; and similar rights are vested in the parliaments of Uganda and Tanzania. The main purpose of subsidiary legislation is administrative and procedural, but as it has the force of law, it is also a vehicle for defining and limiting the rights and obligations of the government. Here, again, it is desirable to avoid burdening subsidiary legislation with matters that do not require legal definition. Such lesser questions can best be regulated from time to time by means of administrative circulars sent out by the ministry on its own authority. Thus, the annual fixing of fees for different types of school may be better done by ministerial circular than by a more formal instrument.

All that has been said about the need for simplicity and directness in Acts of parliament applies equally to minor instruments. Rules governing grants-in-aid provide an example of the problem to be faced. In principle, the soundest method of control of the expenditure of grant-aided establishments is budget control; that is, an annual scrutiny of estimates and accounts under standardized headings of expenditure. By systematic comparisons of expenditure from year to year and between comparable institutions, a flexible but effective control can be maintained. Budget control is, however, difficult to carry out and requires considerable administrative experience. An alternative form of control is provided by working out, on a national average, the unit cost of various items of expenditure. The unit chosen can be the pupil, or the class, and this method of calculation has been found satisfactory for such types of expenditure as educational expenses, or boarding costs. Owing to the varying incidence of increments and different levels of qualification, a unit cost approach is not suitable for assessing staff costs; this must be done *ad hoc* on the basis of an approved establishment. Certain types of expenditure, such as transport and travel costs incurred by a school, vary greatly from one establishment to another and cannot, therefore, suitably be calculated on a unit cost basis applicable to the whole country. It appears, therefore, that the method of expenditure control most suitable for East Africa at present is one that is based on a unit cost system as far as it can suitably be used, the remaining budget items being controlled by individual investigation. As the officers concerned accumulate experience, it should be possible, and may be desirable, to extend budget control over some of the items hitherto calculated on a unit cost basis.

Conclusions

This monograph, based on East African experience, suggests a number of ways in which legislation in education may be adjusted to the contemporary needs of developing, independent countries. All three countries considered still base their legislation on colonial ordinances. In one sense, this is advantageous because it ensures a certain continuity of practice which is desirable in any rapidly developing situation. It has, however, become increasingly clear that the adaptation of old laws is no longer a satisfactory way of meeting current and future needs. This is particularly evident in Kenya, where widespread adaptation was occasioned by the 'regional' constitution of 1963, and further extensive re-adaptation was subsequently made necessary by the ending of 'regionalism' and the return to a unitary State at the end of 1964. Modifying laws on this scale renders them very difficult to use.

Moreover, the old colonial ordinances continued to express a relationship with voluntary bodies which no longer fully accords with the spirit of the times. This is perhaps most obvious in Kenya, where the voluntary contribution to the public school system is rapidly becoming ancillary and incidental to the responsibility of public bodies. The control of schools is thus becoming more and more a matter of controlling public bodies, and less and less a matter of regulating the largely autonomous activities of voluntary agencies. It seems probable that soon the voluntary management of schools will be virtually confined to the non-aided sector.

It has been suggested here that simpler forms of legislation, relying for administrative detail increasingly on subordinate instruments, or even on official circulars, may meet both the needs of administration and circumstances of rapid change and development more aptly than detailed laws. An established and relatively unchanging tradition is a great advantage for smooth and accurate administration, but the developing countries are denied such placid waters. Consequently, everything possible must be done to reduce the wording of legislation to the simplest forms and also to employ administrative devices that are, as far as possible, direct, simple and easily operated.

Good legislation is a matter of balance. The main consideration is whether it allows elbow room for initiative and development both at the centre and in the parts. Too rigid and ramified a legal structure may foster a bureaucratic spirit and impede progress. Arrangements that seem obviously right and sensible today may not appear advisable tomorrow. A framework of law that is too meticulous in the constraints it imposes on the educational system will not easily allow for such changes of mind. On the other hand, where the legal supports are inadequate, educational administration may relapse into confusion, competing claims and ambitions remain unresolved, and educational standards suffer in consequence. In such an atmosphere, initiative will often be defeated and reform frustrated, not from too severe a limitation on freedom, but from the distractions and contradictions of undisciplined freedom. Thus, a middle way must be found. The amount and nature of the legislation that is necessary in a particular country will depend upon local circumstances, traditions and temperaments, as well as on the activities that are to be regulated.

Perhaps the most important need of all is to find the right balance between a strong central power and local initiative. This is a question of local judgement and cannot be made the subject of any general guidance. Its importance lies most of all in the fact that strong central planning and direction could easily be defeated by a neglect of local aspirations. It may well be that there is no abiding solution to this matter and that legislation will itself have to contemplate some shift over the years in the degree of responsibility that local organs are able to take upon themselves. Such changes are themselves a result of education. That is the final truth that needs to be recognized in all discussion of this subject: the more efficient the system of education the more are its requirements—and, therefore, the supporting legislative structure—likely to change. Since it is hard to see into the future—and foresight is particularly at a discount in these developing countries—it is difficult to take adequate account of things to come. Nevertheless, it may prove possible to make certain legislative provisions which allow for some change, without diminishing the powers which are required for immediate purposes.

In attempting to provide for future growth and development, some account must be taken of foreign influences. Though education in any country is deeply marked by the spirit, attitudes and needs of its people, it is nowhere a purely indigenous growth. The flow of ideas from nation to nation has been increased both by the post-war growth of inter-governmental organs, such as Unesco, and what has come to be known as technical aid. A lesser but finite influence is the spread of non-governmental bodies. Thus, it can be expected that future growth will not be a purely local development, but that it will be influenced to a greater or lesser extent by the experience of the rest of the world. What we look forward to, therefore, is not a new purebred strain, but a new hybrid. It is to be hoped that it will possess the vigorous properties that cross-breeding so often ensures.

IIEP book list

The following books, published by Unesco/IIEP, are obtainable from the Institute or from Unesco and its national distributors throughout the world:

Educational development in Africa (1969. Three volumes, containing eleven African research monographs)

Educational planning: a bibliography (1964)

Educational planning: a directory of training and research institutions (1968)

Educational planning: an inventory of major research needs (1965)

Educational planning in the USSR (1968)

Fundamentals of educational planning (series of booklets; full current list available on request)

Manpower aspects of educational planning (1968)

Methodologies of educational planning for developing countries by J. D. Chesswas (1969)

Monographies africaines (five titles, in French only; list available on request)

New educational media in action: case studies for planners (1967. Three volumes)

The new media: memo to educational planners by W. Schramm, P. H. Coombs, F. Kahnert, J. Lyle (1967. A report including analytical conclusions based on the above three volumes of case studies)

Problems and strategies of educational planning: lessons from Latin America (1965)

Qualitative aspects of educational planning (1969)

The following books, produced in but not published by the Institute, are obtainable through normal bookselling channels:

Quantitative methodologies of educational planning by Héctor Correa. Published by International Textbook Co., Scranton, Pa., 1969

The world educational crisis: a systems analysis by Philip H. Coombs. Published by Oxford University Press, New York, London and Toronto, 1968

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